

**Math 10 All Practice Tests Combined****Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. To which set of numbers does  $10.\overline{56}$  belong to?
- a. whole                      b. integer                      c. rational                      d. irrational
- \_\_\_\_\_ 2. What is the least common multiple of 54 and 72.
- a.  $2 \times 3$                       b.  $2^2 \times 3^2$                       c.  $2^3 \times 3^3$                       d.  $2^4 \times 3^2$
- \_\_\_\_\_ 3. Determine the square root of 160 000
- a. 4                              b. 400                              c. 40 000                              d. 4000
- \_\_\_\_\_ 4. Write  $\sqrt{200}$  in simplest form.
- a.  $2\sqrt{50}$                       b.  $10\sqrt{2}$                       c.  $100\sqrt{2}$                       d.  $2\sqrt{10}$
- \_\_\_\_\_ 5. Write  $9\sqrt{2}$  as an entire radical.
- a.  $\sqrt{18}$                       b.  $\sqrt{36}$                       c.  $\sqrt{162}$                       d.  $\sqrt{324}$
- \_\_\_\_\_ 6. Evaluate  $\sqrt[3]{-64}$ .
- a. -4                              b. impossible                              c. -12.8                              d. 4
- \_\_\_\_\_ 7. Evaluate  $\sqrt{0.0169}$ .
- a. 0.0085                      b. 0.0042                      c. 0.13                              d. 0.013
- \_\_\_\_\_ 8. Between which two consecutive integers on a number line would you locate  $\sqrt[3]{-18}$ ?
- a. -2 and -3                      b. -3 and -4                      c. 2 and 3                              d. -1 and -2

9. Evaluate  $\sqrt[4]{16}$ .

- a. 2                      b.  $2\bar{6}$                       c. 16                      d. 1.41

10. Determine the greatest common factor of 56 and 88.

- a. 77                      b. 616                      c. 7                      d. 8

11. To which set(s) of numbers does  $-\sqrt{49}$  belong?

I	Natural
II	Integer
III	Rational
IV	Irrational

- a. II and III only      b. III only                      c. I, II and III only      d. IV only

12. Which of these numbers is an integer, but not a whole number?

$-8, 0, 5, \sqrt{7}$

- a. 0                      b.  $-8$                       c.  $\sqrt{7}$                       d. 5

13. Which of these numbers is rational?

$\sqrt{\frac{4}{25}}, \sqrt{24}, \sqrt[3]{25}, \sqrt{2.5}$

- a.  $\sqrt{24}$                       b.  $\sqrt{2.5}$                       c.  $\sqrt[3]{25}$                       d.  $\sqrt{\frac{4}{25}}$

14. Write an equivalent form of  $\frac{4}{5}$  as a square root.

- a.  $\sqrt{\frac{16}{10}}$                       b.  $\sqrt[3]{\frac{64}{125}}$                       c.  $\sqrt{\frac{8}{25}}$                       d.  $\sqrt{\frac{16}{25}}$

15. Evaluate  $\sqrt{0.0196}$ .

- a. 0.0098                      b. 0.0049                      c. 0.14                      d. 0.014

- \_\_\_ 16. Determine which of these numbers is the least.

$$\sqrt{14}, \sqrt[3]{30}, \sqrt[3]{100}, \sqrt[3]{75}, \sqrt{17}$$

- a.  $\sqrt[3]{100}$       b.  $\sqrt[3]{30}$       c.  $\sqrt{14}$       d.  $\sqrt[3]{75}$

- \_\_\_ 17. Order these numbers from greatest to least:  $2\sqrt{5}, \sqrt[3]{68}, \sqrt[3]{6}$

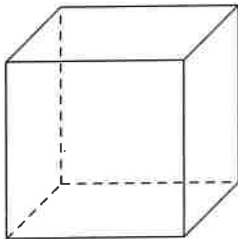
a.  $2\sqrt{5}, \sqrt[3]{68}, \sqrt[3]{6}$       c.  $2\sqrt{5}, \sqrt[3]{6}, \sqrt[3]{68}$

b.  $\sqrt[3]{6}, \sqrt[3]{68}, 2\sqrt{5}$       d.  $\sqrt[3]{68}, 2\sqrt{5}, \sqrt[3]{6}$

- \_\_\_ 18. Write the prime factorization of 4116.

a.  $2^3 \cdot 3 \cdot 7^2$       b.  $2^2 \cdot 3 \cdot 7^3$       c.  $2^2 \cdot 3 \cdot 7^2$       d.  $2 \cdot 3^2 \cdot 7^3$

- \_\_\_ 19. Determine the edge length of this cube.



Volume  
= 91 125 cm<sup>3</sup>

- a. 301.87 cm      b. 45 cm      c. 6.71 cm      d. 3375 cm

- \_\_\_ 20. Evaluate  $\sqrt[4]{\frac{256}{625}}$ .

- a.  $\frac{4}{5}$       b.  $\frac{4}{25}$       c.  $\frac{16}{25}$       d.  $\frac{16}{5}$

- \_\_\_ 21. Evaluate:  $-4^4$

- a. -256      b. -16      c. 16      d. 256

- \_\_\_ 22. Simplify  $m^{-4}n^6 \cdot m^5n^{-9}$ . Write using powers with positive exponents.

- a.  $mn^3$       b.  $\frac{m}{n^3}$       c.  $\frac{n^{15}}{m^9}$       d.  $\frac{n^3}{m}$

\_\_\_\_\_ 23. Simplify  $\frac{12p^4q^{-5}}{28pq^4}$ . Write using powers with positive exponents.

a.  $\frac{3p^4}{7q^9}$

b.  $\frac{p^3}{16q^9}$

c.  $\frac{3p^3}{7q}$

d.  $\frac{3p^3}{7q^9}$

\_\_\_\_\_ 24. Simplify  $\frac{(3.5^{-5})(3.5^8)}{3.5^{-4}}$  by writing as a single power.

a.  $3.5^7$

b.  $3.5^{-36}$

c.  $3.5^{-11}$

d.  $3.5^{-1}$

\_\_\_\_\_ 25. Evaluate:  $[(-5)^0]^3$

a. -3

b. -1

c. 3

d. 1

\_\_\_\_\_ 26. Simplify  $\frac{(m^5n^{-3})^{-1}}{(m^{-4}n)^4}$ .

a.  $\frac{m^{11}}{n^7}$

b.  $\frac{m^{11}}{n}$

c.  $\frac{m^{21}}{n}$

d.  $\frac{m^{21}}{n^7}$

\_\_\_\_\_ 27. Simplify:  $\frac{(2a^2b)^5}{(4a^2b^3)^2}$

a.  $\frac{5a^6}{4b}$

b.  $\frac{2a^6}{b}$

c.  $\frac{2a^3}{b}$

d.  $\frac{1}{2b}$

\_\_\_\_\_ 28. Simplify  $(64a^6b^{15})^{\frac{2}{3}}$ .

a.  $16a^4b^{10}$

b.  $16a^9b^{10}$

c.  $64a^4b^{10}$

d.  $16a^4b^{25}$

\_\_\_\_\_ 29. Which power with a negative exponent is equivalent to  $\frac{1}{25}$ ?

a.  $5^{-2}$

b.  $-5^{-2}$

c.  $2^{-5}$

d.  $(-5)^2$

30. Evaluate  $\left(\frac{11}{5}\right)^{-3}$ .
- a.  $-\frac{125}{1331}$       b.  $-\frac{1331}{125}$       c.  $\frac{125}{1331}$       d.  $-\frac{1}{33}$
31. Evaluate  $125^{\frac{4}{3}}$ .
- a.  $\frac{1}{625}$       b.  $\frac{3}{500}$       c.  $-\frac{1}{625}$       d.  $-625$
32. Write  $43^{\frac{5}{6}}$  as a radical.
- a.  $\sqrt[5]{43^6}$       b.  $(\sqrt[6]{43})^5$       c.  $0.83\sqrt[6]{43}$       d.  $(\sqrt[5]{43})^6$
33. Evaluate  $216^{\frac{1}{3}}$  without using a calculator.
- a. 14.7      b. 6      c. -6      d. 72
34. Evaluate  $\left(\frac{16}{81}\right)^{\frac{1}{4}}$  without using a calculator.
- a.  $\frac{4}{81}$       b.  $\frac{2}{9}$       c.  $\frac{2}{3}$       d.  $\frac{4}{9}$
35. Evaluate  $\left(-\frac{2}{5}\right)^{\frac{3}{4}} \cdot \left(-\frac{2}{5}\right)^{\frac{5}{4}}$ .
- a.  $\frac{2}{5}$       b.  $\frac{4}{25}$       c.  $\frac{25}{4}$       d.  $-\frac{4}{25}$
36. Evaluate  $\left(\frac{27}{216}\right)^{\frac{5}{3}}$ .
- a.  $\frac{243}{36}$       b. 0.287 174...      c.  $\frac{243}{7776}$       d.  $\frac{243}{216}$

\_\_\_ 37. Simplify:  $\left(\sqrt[4]{x^3}\right)\left(\sqrt[8]{x^{12}}\right)$

a.  $x^{\frac{9}{8}}$

b.  $x^{\frac{5}{4}}$

c.  $x^2$

d.  $x^{\frac{9}{4}}$

\_\_\_ 38. Which of the following expressions is equivalent to  $\frac{1}{\sqrt[5]{x^4}}$

a.  $x^{\frac{5}{4}}$

b.  $x^{\frac{4}{5}}$

c.  $-x^{\frac{4}{5}}$

d.  $x^{\frac{4}{5}}$

\_\_\_ 39. Identify the greatest common factor of the terms in the trinomial  $6s^3t^4 + 12s^4t^2 - 15s^2t^3$ .

a.  $6s^2t^2$

c.  $3s^2t^3$

b.  $3s^2t^2$

d.  $3s^3t^2$

\_\_\_ 40. Factor the binomial  $15y^2 - 48y$ .

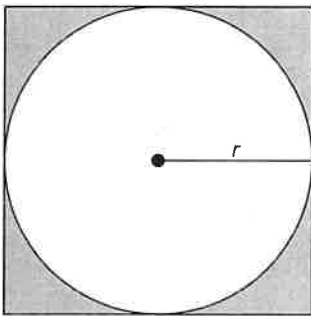
a.  $3(5y^2 - 16y)$

c.  $y(15y - 48)$

b.  $3y(5y - 16y)$

d.  $3y(5y - 16)$

\_\_\_ 41. Which expression represents the area of the shaded region?



a.  $2r(2r - \pi)$

b.  $r^2(1 - \pi)$

c.  $r^2(4 - \pi)$

d.  $r(r - 2\pi)$

\_\_\_ 42. Expand and simplify:  $(6p + 3)(5p - 6)$

a.  $30p^2 + 21p - 18$

c.  $30p^2 + 51p - 18$

b.  $30p^2 - 21p - 18$

d.  $30p^2 - 51p - 18$

\_\_\_ 43. Expand and simplify:  $(5m - 3n)^2$

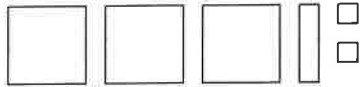
a.  $25m^2 - 9n^2$

b.  $25m^2 - 15mn + 9n^2$

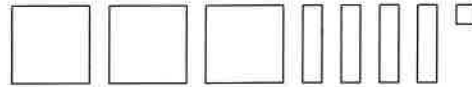
c.  $25m^2 - 30mn + 9n^2$

d.  $25m^2 + 9n^2$

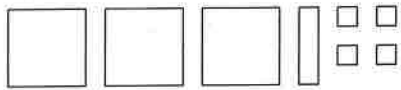
\_\_\_ 44. Which set of algebra tiles represents  $3x^2 + x + 4$ ?



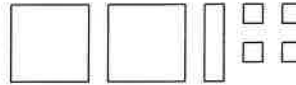
a.



c.



b.



d.

\_\_\_ 45. Expand and simplify:  $(4d - 1)(5d^2 + 12d - 3)$

a.  $20d^3 + 53d^2 + 3$

b.  $20d^3 + 48d^2 - 12d + 3$

c.  $20d^3 + 43d^2 - 24d + 3$

d.  $20d^3 + 43d^2 + 3$

\_\_\_ 46. Factor:  $16p^2 - 81q^2$

a.  $(4p - 9q)^2$

b.  $(4p + 9q)^2$

c.  $(16p - 9q)(p - 9q)$

d.  $(4p + 9q)(4p - 9q)$

\_\_\_ 47. Factor:  $25c^2 - 20c + 4$

a.  $(5c - 2)^2$

b.  $(5c - 2)(5c + 2)$

c.  $(10c - 4)^2$

d.  $(10c - 4)(10c + 4)$

\_\_\_ 48. Factor:  $t^2 + 9t - 36$

a.  $(t - 2)(t + 18)$

b.  $(t + 2)(t - 18)$

c.  $(t + 12)(t - 3)$

d.  $(t - 12)(t + 3)$

\_\_\_ 49. Factor:  $v^2 - 13v + 36$

a.  $(v+3)(v+12)$

b.  $(v-3)(v-12)$

c.  $(v-4)(v-9)$

d.  $(v+4)(v+9)$

\_\_\_ 50. Factor:  $-24 - 5x + x^2$

a.  $(8+x)(-3+x)$

b.  $(2+x)(-12+x)$

c.  $(-2+x)(12+x)$

d.  $(-8+x)(3+x)$

\_\_\_ 51. Factor using the:  $30x^2 - 20x - 10$ .

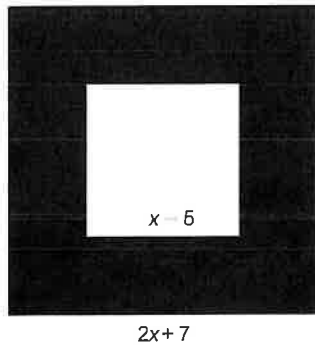
a. 1

b.  $10(3x+1)(x-1)$

c. 2

d. 3

\_\_\_ 52. Determine the area of the shaded region. Leave your answer in expanded form.



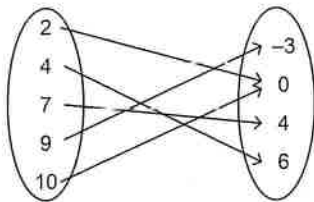
a.  $4(x+12)$

b.  $3x^2 + 38x + 24$

c.  $(3x+12)(x+2)$

d.  $(3x-2)(x-12)$

\_\_\_ 53. Identify the range of this relation.



a.  $\{-3, 4, 6\}$

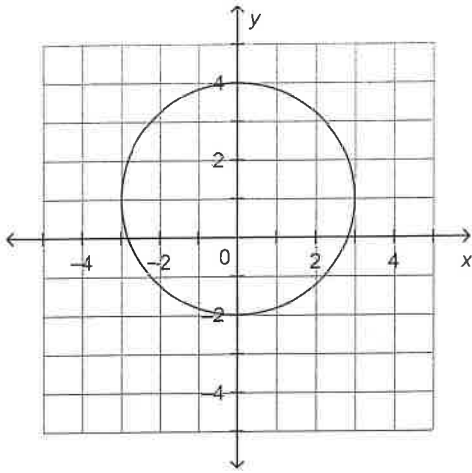
b.  $\{4, 7, 9\}$

c.  $\{-3, 0, 4, 6\}$

d.  $\{2, 4, 7, 9, 10\}$



54. Determine the **range** of the graph.



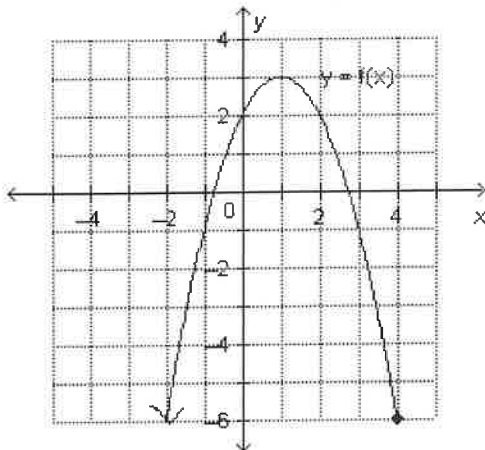
- a.  $-2 \leq y \leq 4$       b.  $-2 \leq y \leq 3$       c.  $-3 \leq x \leq 3$       d.  $-3 \leq y \leq 4$

55. Which set of ordered pairs does not represent a function?

- i)  $\{(2, 5), (3, 8), (4, 11), (2, -1)\}$   
 ii)  $\{(4, 6), (5, -7), (7, 9), (8, -10)\}$   
 iii)  $\{(-3, -8), (-1, -6), (-2, 5), (0, 7)\}$   
 iv)  $\{(7, 0), (4, -1), (-6, 5), (-8, 0)\}$

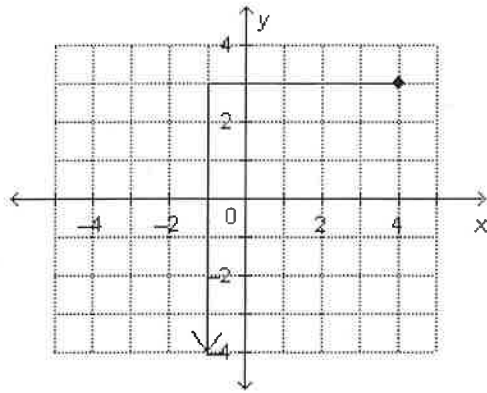
- a. iv      b. iii      c. ii      d. i

56. Determine the domain and range of the graph of this function.



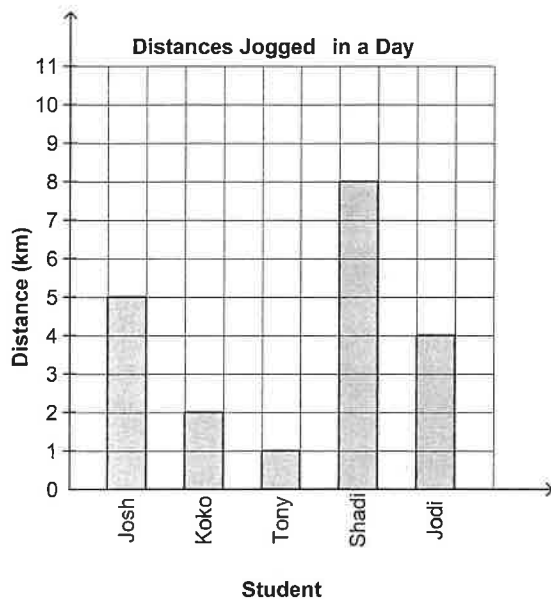
- a.  $x \leq 4; -6 \leq y \leq 3$       b.  $1 \leq x \leq 4; y \leq 3$       c.  $x \leq 3; y \leq 4$       d.  $x \leq 4; y \leq 3$

57. Determine the domain and range of this graph.



- a.  $x \leq 3; -1 \leq y \leq 4$
- b.  $-1 \geq x \geq 4; y \leq 3$
- c.  $3 \leq x \leq 4; y \leq -1$
- d.  $-1 \leq x \leq 4; y \leq 3$

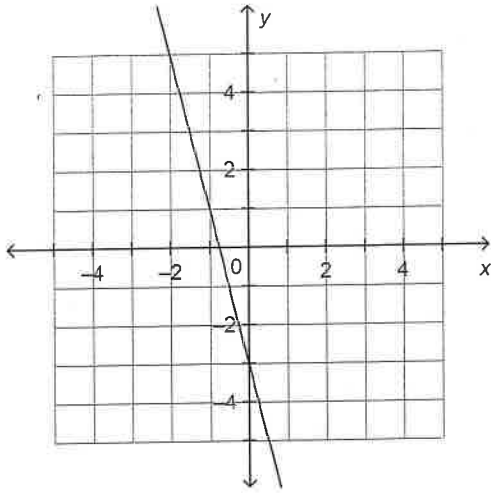
58. Consider the relation represented by this graph. Represent the relation as a set of ordered pairs.



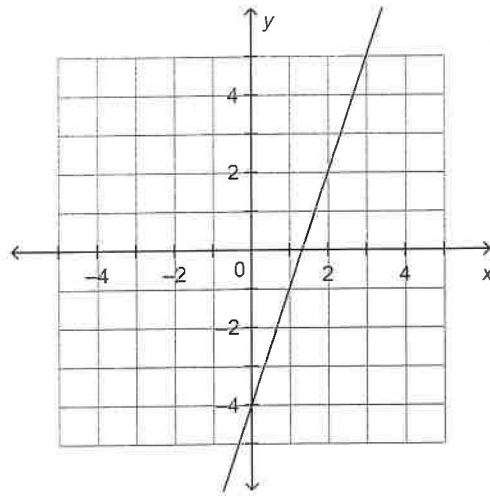
- a.  $\{(Josh, 5), (Koko, 2), (Tony, 1), (Shadi, 8), (Jodi, 4)\}$
- b.  $\{(5, Josh), (2, Koko), (Tony, 1), (8, Shadi), (Jodi, 4)\}$
- c.  $\{(5, Josh), (2, Koko), (1, Tony), (8, Shadi), (4, Jodi)\}$
- d.  $\{(Josh, 5), (Koko, 2), (Tony, 1), (Shadi, 4), (Jodi, 8)\}$

59. Which graph represents the linear function  $y = -4x + 3$ ?  
 (HINT: Create a table of values using  $x = 0, 1, 2$  and then plot the ordered pairs)

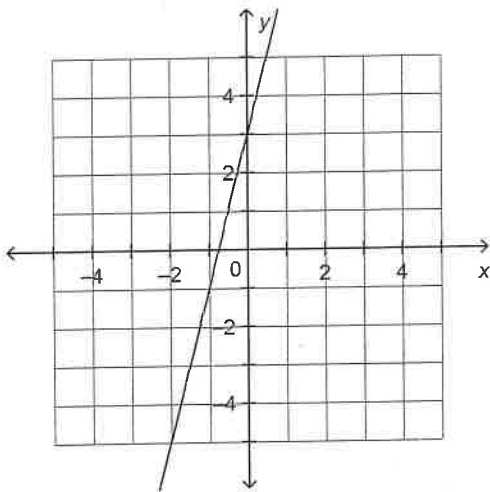
a.



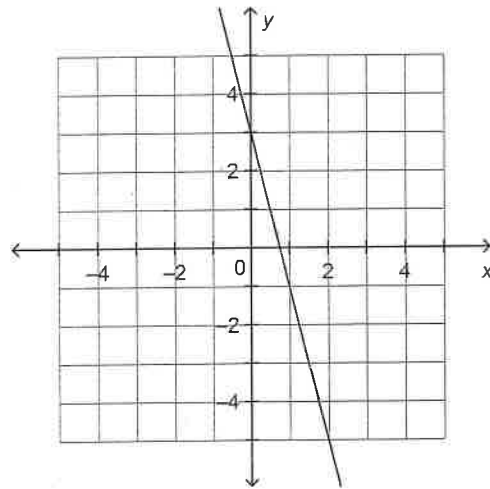
c.



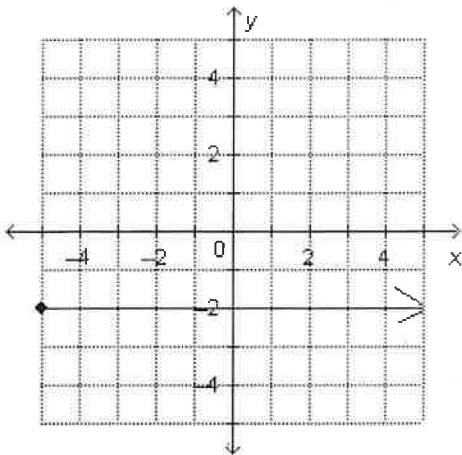
b.



d.



60. Determine the domain of this graph.



- a.  $x > -5$
- b.  $-5 \leq x \leq 5$
- c.  $y \geq -2$
- d.  $x \geq -5$

61. This table shows the cost,  $C$  dollars, of different numbers of tickets sold,  $n$ . Identify the range.

Number of Tickets, $n$	Cost, $C$ (\$)
1	11.50
2	23.00
3	34.50
4	46.00
5	57.50

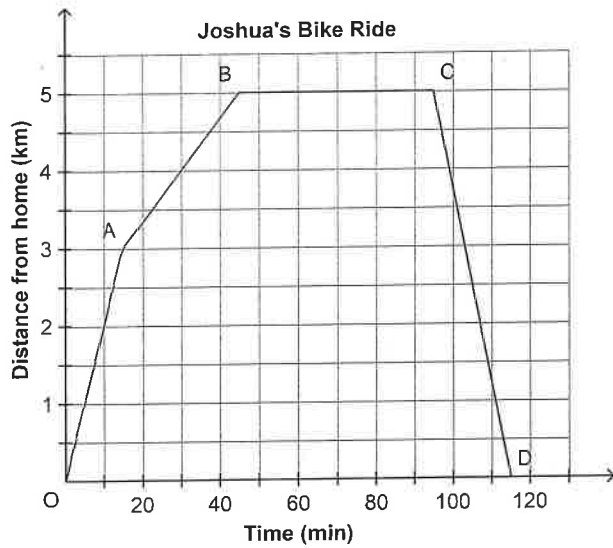
- a.  $\{1, 11.50, 2, 23.00, 3, 34.50, 4, 46.00, 5, 57.50, \dots\}$
- b.  $\{1, 2, 3, 4, 5, 11.50, 23.00, 34.50, 46.00, 57.50\}$
- c.  $\{11.50, 23.00, 34.50, 46.00, 57.50, \dots\}$
- d.  $\{1, 2, 3, 4, 5, \dots\}$

62. Identify the domain of this relation.

$$\{(9,11), (6,8), (10,-12), (7,-9)\}$$

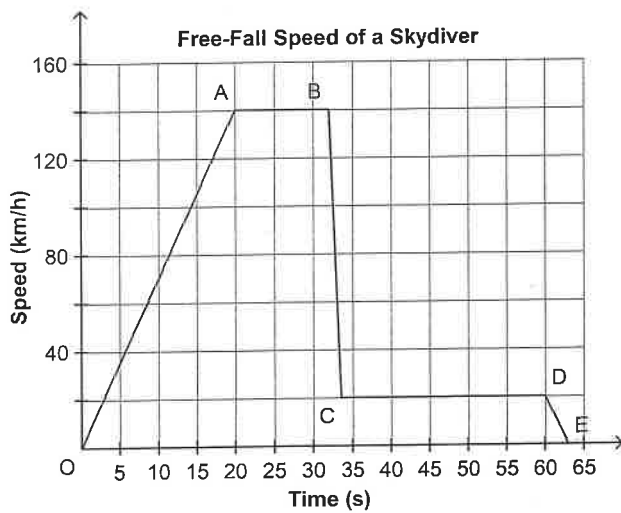
- a.  $\{6,7,9,10\}$
- b.  $\{-9,8,10,11\}$
- c.  $\{6,7,10,11\}$
- d.  $\{-12,-9,8,11\}$

63. Joshua went on a bike ride. For part of the ride, Joshua slowed down his biking speed. Which segment of the graph best describes this part of his bike ride?



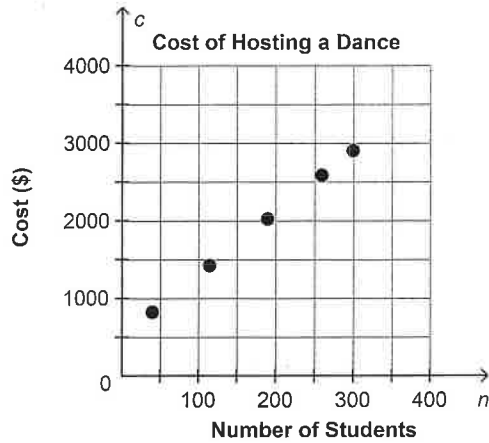
- a. CD                      b. AB                      c. OA                      d. BC

64. This graph shows the free-fall speed of a skydiver as a function of time. About how long did the skydiver's jump last?

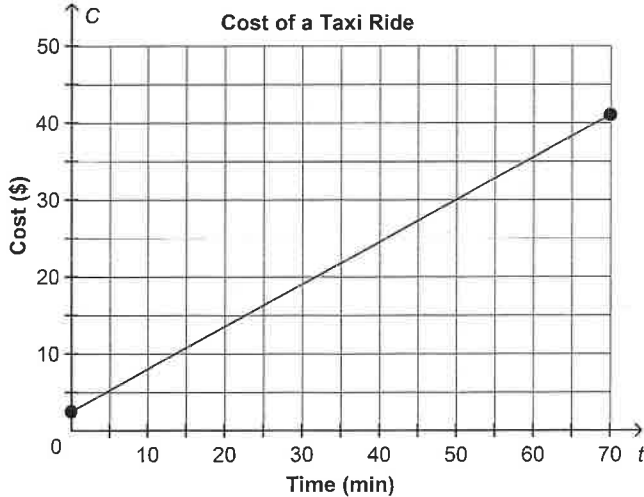


- a. About 20 s              b. About 13 s              c. About 60 s              d. About 63 s

65. This graph shows the cost of hosting a dance,  $c$ , as a function of the number of students attending,  $n$ . What is a restriction on the domain?



- The domain can only contain positive numbers.
  - The domain can only contain whole numbers between 1000 and 3500.
  - The domain can only contain whole numbers.
  - The domain can only contain whole numbers that are multiples of 50.
66. This graph shows the cost of a taxi ride. The cost,  $C$  dollars, is a function of the duration of the ride,  $t$  min. What is the duration of the ride when the cost is \$35?

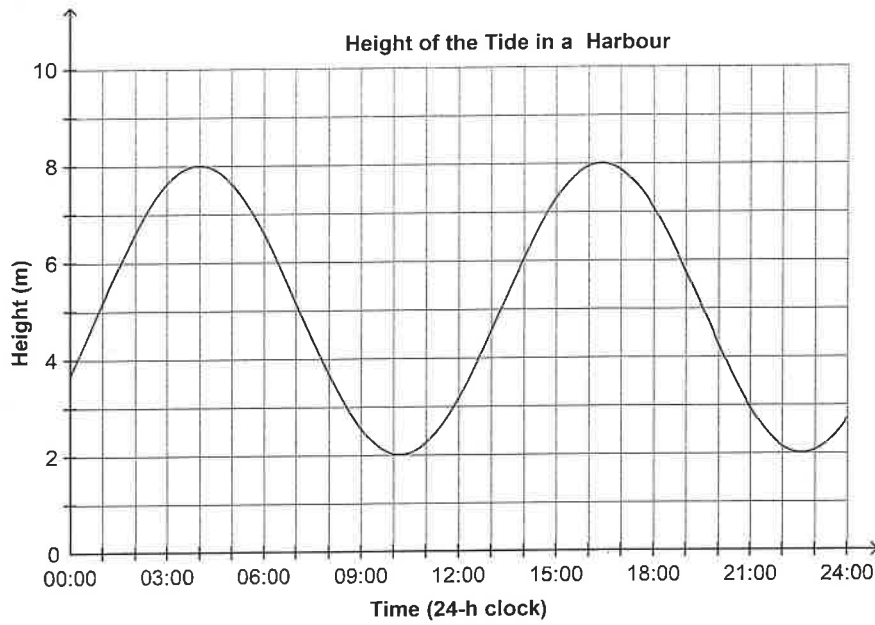


- 49 min
  - 63 min
  - 56 min
  - 59 min
67. The relation between  $x$  and  $y$  is linear. Which number would complete this table?

$x$	3	7	11	15	19
$y$	18	11	4		-10

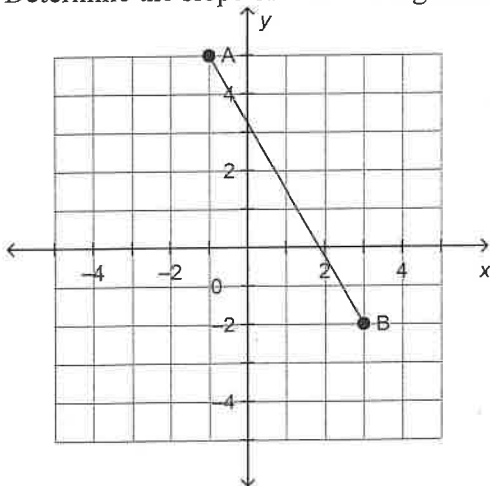
- 12
- 3
- 11
- 3

68. This graph shows the height of the tide in a harbour as a function of time in one day. At about what time in the morning does the least height occur?



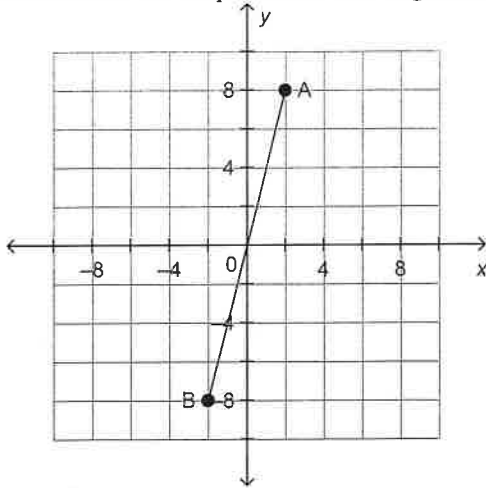
- a. About 11:00 a.m.                      c. About 10:00 a.m.  
 b. About 4:00 a.m.                        d. About 2:00 a.m.

69. Determine the slope of this line segment.



- a.  $-\frac{4}{7}$     c.  $\frac{4}{7}$   
 b.  $-\frac{7}{4}$     d.  $\frac{7}{4}$

70. Determine the slope of this line segment.

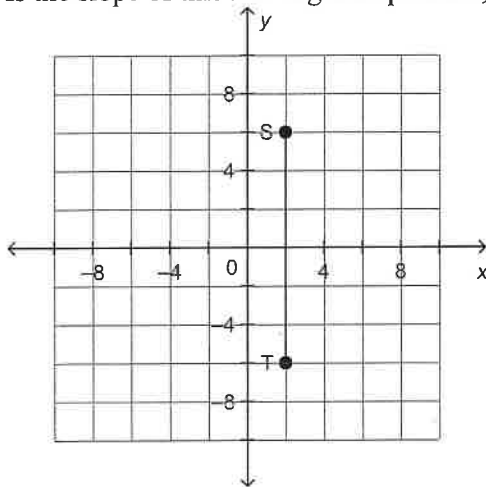


- a.  $\frac{1}{5}$                       b. 4                      c.  $\frac{1}{4}$                       d. 5

71. A road drops 0.8 m for every 4.8 m measured horizontally. What is the rise of the road?

- a. -4.8                      b. -0.8                      c.  $-\frac{0.8}{4.8}$                       d.  $\frac{4.8}{0.8}$

72. Is the slope of this line segment positive, negative, zero, or not defined?



- a. zero                      b. positive                      c. not defined                      d. negative

73. Determine the slope of the line that passes through G(6, -3) and H(-3, 10).

**Hint:** Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$

- a.  $\frac{13}{9}$                       c.  $\frac{9}{13}$   
 b.  $-\frac{9}{13}$                       d.  $-\frac{13}{9}$





78. A line passes through  $J(-12, 6)$  and  $K(4, -5)$ . Determine the coordinates of  $L$  so that line  $JL$  is perpendicular to line  $JK$ . (Show your work) **Hint: Use**  $m = \frac{y_2 - y_1}{x_2 - x_1}$

a.  $L(16, -11)$

b.  $L(-1, 22)$

c.  $L(-11, 16)$

79. The relation between  $x$  and  $y$  is linear. Which number would complete this table?

$x$	3	7	11	15	19
$y$	19	13	7		-5

a.  $-7$

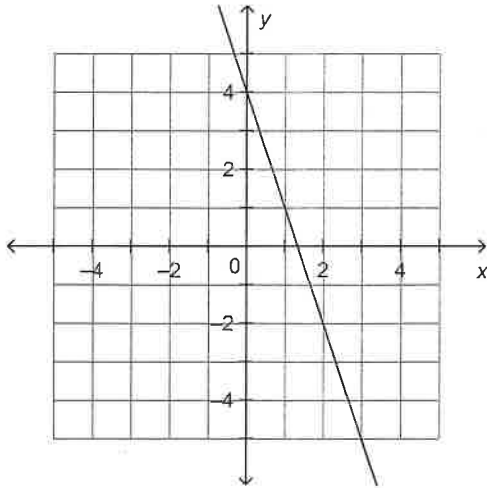
b.  $1$

c.  $-6$

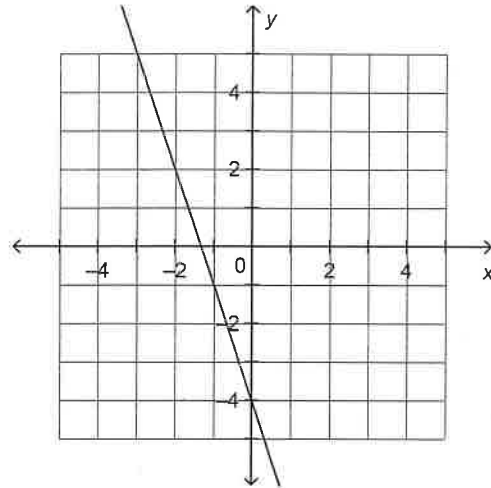
d.  $6$

80. Which graph represents the linear function  $y = -3x + 4$ ?

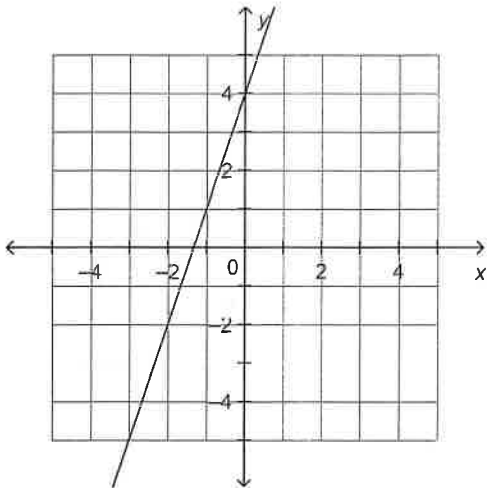
a.



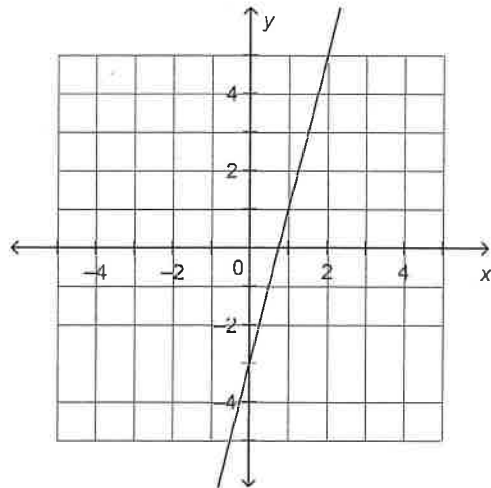
c.



b.



d.



81. A line passes through D(-5, 5) and N(7, -6). Determine the coordinates of two points on a line parallel to DN.

**Hint:** Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$

- a. (10, -10) and (14, -12)
- b. (-10, 14) and (10, -12)
- c. (-10, 10) and (14, -12)
- d. (-10, 10) and (-12, 14)

82. A line has x-intercept 4 and y-intercept 8? Determine the slope of the line. Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$

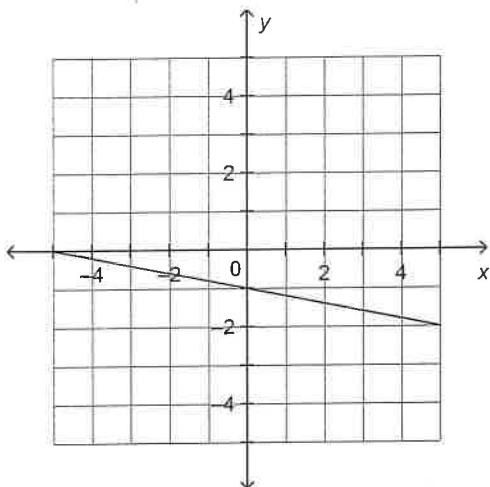
- a.  $\frac{1}{2}$
- b. 2
- c. -2
- d.  $-\frac{1}{2}$

83. Which equation does not represent a linear relation?

- i)  $y = x^2 - 10$
- ii)  $x = -5$
- iii)  $y = -6x + 10$
- iv)  $6x + 11y = 13$

- a. iii
- b. ii
- c. i
- d. iv

84. Write an equation to describe this graph.



- a.  $y = -\frac{1}{5}x - 1$
- b.  $y = -\frac{1}{5}x + 1$
- c.  $y = \frac{1}{5}x - 1$
- d.  $y = \frac{1}{5}x + 1$

\_\_\_\_\_ 85. Which equation is written in general form?

- a.  $-4x - 12y + 15 = 0$    b.  $12x - 4y + 15 = 0$    c.  $12x = 4y - 15$    d.  $\frac{1}{15}x - 4y - 12 = 0$

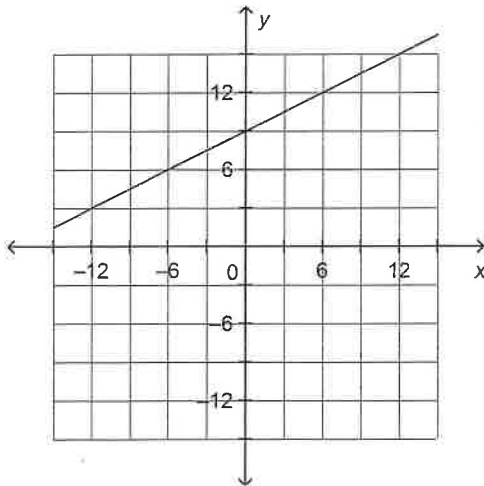
\_\_\_\_\_ 86. Write an equation for the graph of a linear function that has slope 8 and passes through R(4, -3).

- a.  $y + 3 = -8(x - 4)$    b.  $y + 3 = 8(x - 4)$    c.  $y + 3 = \frac{1}{8}(x - 4)$    d.  $y - 3 = 8(x + 4)$

\_\_\_\_\_ 87. Describe the graph of the linear function with this equation:  $y + 3 = \frac{1}{3}(x - 2)$

- a. The graph is a line through  $(-2, 3)$  with slope  $\frac{1}{3}$ .  
b. The graph is a line through  $(2, -3)$  with slope  $\frac{1}{3}$ .  
c. The graph is a line through  $(2, -3)$  with slope  $-\frac{1}{3}$ .  
d. The graph is a line through  $(-2, 3)$  with slope  $-\frac{1}{3}$ .

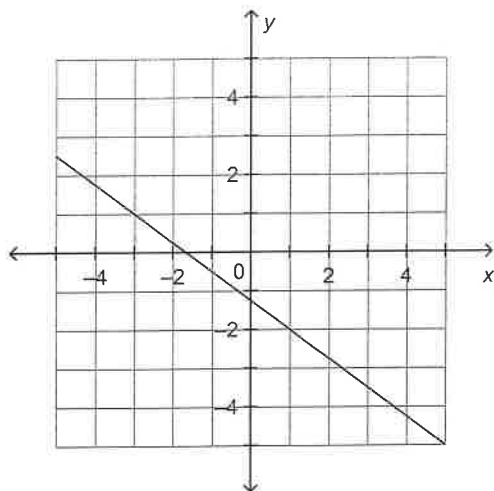
\_\_\_\_\_ 88. Write an equation to describe this graph.



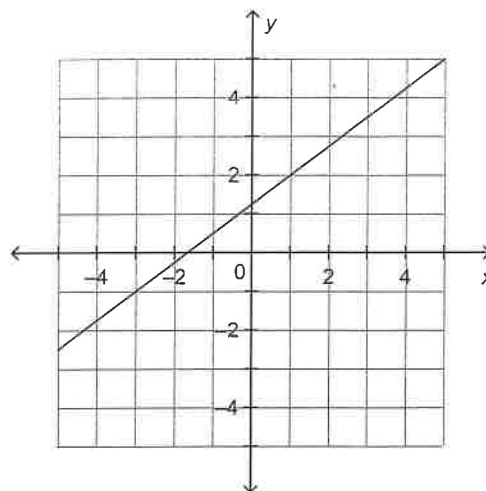
- a.  $f(x) = -\frac{1}{2}x + 9$    c.  $f(x) = -\frac{1}{2}x - 9$   
b.  $f(x) = \frac{1}{2}x - 9$    d.  $f(x) = \frac{1}{2}x + 9$

89. Which graph represents the equation  $y + 1 = \frac{3}{4}(x + 3)$ ?

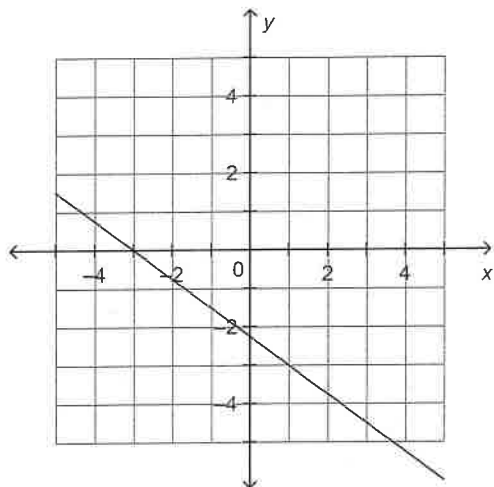
a.



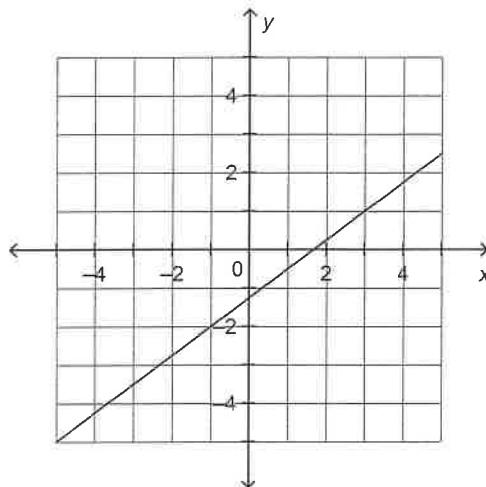
c.



b.



d.



90. Predict what will be common about the graphs of these equations.

i)  $y = 2x - 6$

iii)  $y = -5x - 6$

ii)  $y = -3x - 6$

iv)  $y = 5x - 6$

a. All the graphs will have the same  $y$ -intercept.

c. All the graphs will have the same slope.

b. All the graphs will have the same  $x$ -intercept.

d. None of the above.

\_\_\_\_\_ 91. Which equations represent parallel lines?

a.  $y = 8x + 8, y = -5x + 8$

c.  $y = 8x - 5, y = 14x + 14$

b.  $y = 14x - 5, y = -5x + 8$

d.  $y = -5x + 14, y = -5x + 8$

\_\_\_\_\_ 92. Which equations represent perpendicular lines?

a.  $y = 6x - 7, y = 6x + 7$

c.  $y = 11x - 7, y = 11x + \frac{1}{7}$

b.  $y = -7x + 11, y = \frac{1}{7}x + 6$

d.  $y = \frac{1}{6}x + 6, y = 6x + 6$

\_\_\_\_\_ 93. Determine the slope of the line with this equation:  $16x - 4y + 2 = 0$

a.  $-4$

c.  $-\frac{1}{4}$

b.  $\frac{1}{4}$

d.  $4$

\_\_\_\_\_ 94. Write this equation in slope-intercept form:  $10x + 3y - 4 = 0$

a.  $y = \frac{10}{3}x + \frac{4}{3}$

c.  $y = \frac{10}{3}x - \frac{4}{3}$

b.  $y = -\frac{10}{3}x + \frac{4}{3}$

d.  $y = -\frac{10}{3}x - 4$

\_\_\_\_\_ 95. Write an equation for the graph of a linear function that has slope  $-\frac{1}{3}$  and y-intercept  $-3$ .

a.  $y = -3x - \frac{1}{3}$

c.  $y = \frac{1}{3}x + 3$

b.  $y = -\frac{1}{3}x - 3$

d.  $y = 3x - \frac{1}{3}$

\_\_\_\_\_ 96. Write an equation for the graph of a linear function that has slope 1 and y-intercept 8.

a.  $y = x + 8$

c.  $y = 8x + 1$

b.  $y = -8x + -1$

d.  $y = -x - 8$

97. Write this equation in standard form:  $y = -\frac{3}{2}x + 8$

a.  $3x + 2y = 16$   
b.  $3x - 2y + 8 = 0$

c.  $3x + 2y - 8 = 0$   
d.  $-3x - 2y - 16 = 0$

98. Write this equation in general form:  $y + 5 = \frac{5}{3}(x - 3)$

a.  $5x - 3y = -8$   
b.  $5x - 3y - 8 = 0$

c.  $5x - 3y - 30 = 0$   
d.  $5x + 3y - 30 = 0$

99. Which linear system has the solution  $x = 5$  and  $y = -4$ ?

a.  $x + 3y = 12$   
 $4x - 2y = -27$

c.  $3x + y = 11$   
 $-2x + 4y = -26$

b.  $2x + 3y = 5$   
 $-2x + y = 11$

d.  $x + 3y = 5$   
 $2x + 4y = 10$

100. Create a linear system to model this situation:

In a board game, Judy scored 2 points more than four times the number of points Ann scored. There was a total of 57 points scored.

a.  $j = 2 + 4a$   
 $j + a = 57$

b.  $j - 2 = 4a$   
 $j + 2a = 57$

c.  $j + 2 = 4a$   
 $j + a = 57$

d.  $a = 2 + 4j$   
 $j + a = 57$

101. Without graphing, determine the slope of the graph of the equation:

**HINT: Write the equation in slope-intercept form**

$5x + 5y = 10$

a. 1

b. -1

c. 5

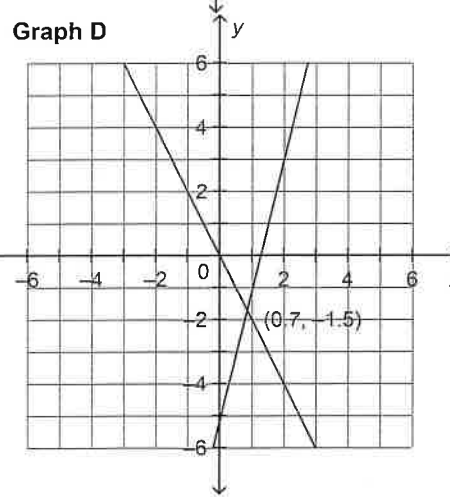
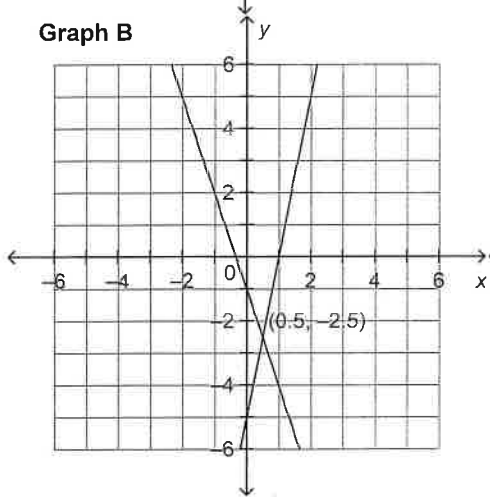
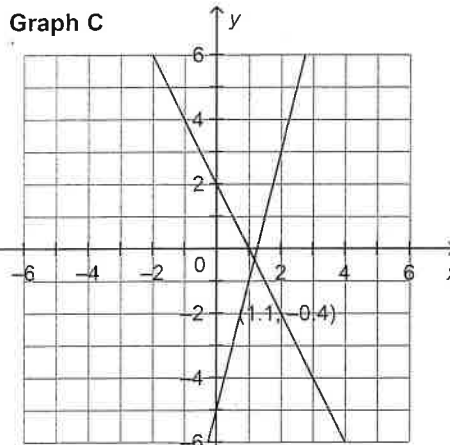
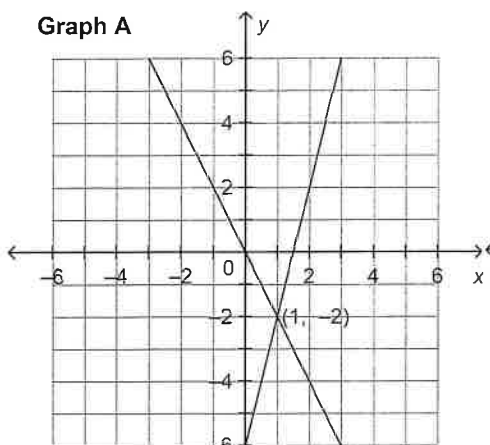
d. 5

102. Which graph represents the solution of the linear system:

**HINT: Write both equations in slope-intercept form**

$$y = -2x$$

$$y + 6 = 4x$$



- a. Graph A
- b. Graph B

- c. Graph C
- d. Graph D

103. Use substitution to solve this problem:

The perimeter of a rectangular field is 256 m. The length is 22 m longer than the width.

What are the dimensions of the field? **(SHOW YOUR WORK)**

- a. 55 m by 73 m
- b. 65 m by 63 m
- c. 75 m by 53 m
- d. 45 m by 83 m



\_\_\_ 104. Without graphing, determine which of these equations represent parallel lines.

**HINT: Write both equations in slope-intercept form or use slope =  $\frac{-A}{B}$**

i)  $-7x + 6y = 10$

ii)  $-5x + 6y = 10$

iii)  $-3x + 6y = 10$

iv)  $-7x + 6y = 12$

a. ii and iii

b. i and ii

c. i and iv

d. i and iii

\_\_\_ 105. Determine the number of solutions of the linear system:

**HINT: Write both equations in slope-intercept form**

$$3x - 5y = 49$$

$$-9x + 15y = 3$$

a. one solution

c. two solutions

b. no solution

d. infinite solutions

\_\_\_ 106. Determine the number of solutions of the linear system:

**HINT: Write both equations in slope-intercept form**

$$8x + 3y = 149$$

$$10x - 6y = 430$$

a. no solution

c. two solutions

b. one solution

d. infinite solutions

\_\_\_ 107. Determine the number of solutions of the linear system:

**HINT: Write both equations in slope-intercept form**

$$9x + 6y = 240$$

$$-36x - 24y = -960$$

a. 2 solutions

c. infinite solutions

b. one solution

d. no solution

\_\_\_ 108. Two lines in a linear system have the same slope, but different y-intercepts.

How many solutions does the linear system have?

a. two solutions

c. infinite solutions

b. no solution

d. one solution

\_\_\_ 109. Use substitution to solve this linear system. ( 3 marks )

$$x = 2 + y$$

$$3x + 12y = -174$$

a.  $(-12, -12)$

b.  $(-10, -10)$

c.  $(-10, -12)$

d.  $(-12, -10)$

\_\_\_\_\_ 110. Use an elimination strategy to solve this linear system. ( 3 marks )

$$4x - 3y = 10$$

$$2x + 5y = 18$$

a.  $x = 14$  and  $y = 2$

c.  $x = 4$  and  $y = 2$

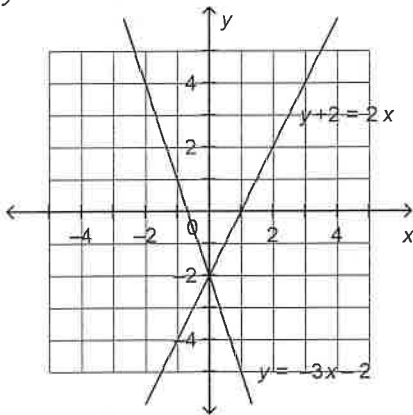
b.  $x = \frac{37}{7}$  and  $y = \frac{26}{7}$

d.  $x = 2$  and  $y = 4$

\_\_\_\_\_ 111. Use the graph to solve the linear system: ( 1 mark )

$$y = -3x - 2$$

$$y + 2 = 2x$$



answer: \_\_\_\_\_

a.  $(2, -2)$

c.  $(2, 0)$

b.  $(0, 0)$

d.  $(0, -2)$

\_\_\_\_\_ 112. For what value of  $k$  does the linear system below have infinite solutions? ( 2 marks )

**HINT: Write both equations in slope-intercept form**

$$\frac{3}{4}x + y = 13$$

$$kx + 2y = 26$$

answer: \_\_\_\_\_

a. 26

b.  $\frac{3}{4}$

c.  $\frac{3}{2}$

d. 0

\_\_\_\_\_ 113. Which of the following numbers occurs at some point in the sequence  $-16, -11, -6, -1, 4, \dots$ ?

a.  $-2$

c. 19

b. 12

d. 5

- \_\_\_ 114. The common difference in the arithmetic sequence 10, 17, 24, 31, ... is
- a. -7
  - b. 7
  - c. 14
  - d.  $\frac{17}{10}$
- \_\_\_ 115. The common difference in the arithmetic sequence  $\frac{5}{9}, \frac{29}{36}, \frac{19}{18}, \frac{47}{36}, \frac{14}{9}, \dots$  is
- a.  $\frac{145}{324}$
  - b. 16
  - c. 4
  - d.  $\frac{1}{4}$
- \_\_\_ 116. What is the 19th term of the sequence -21, -29, -37, -45, -53, ...?
- a. -8
  - b. -165
  - c. 123
  - d. -181
- \_\_\_ 117. Lisa earns \$22.50 per hour plus time and a half for overtime. If she works 8 hours of overtime, how much money will she earn for these 8 hours?
- a. \$180
  - b. \$270
  - c. \$12
  - d. \$213.75
- \_\_\_ 118. Roger earns a yearly salary of \$38 500. Roger receives a paycheck every two weeks. What is Roger's gross earning each paycheck?
- a. \$3208.33
  - b. \$1480.77
  - c. \$1604.17
  - d. \$19 250
- \_\_\_ 119. Cole works at Future shop and earns \$10.25 per hour. He also earns a commission of 6% on all electronics sales. If he worked 17 hours this week plus sold \$2305 worth of electronics, what are his gross earnings?
- a. \$1557.25
  - b. \$174.25
  - c. \$184.71
  - d. \$312.55
- \_\_\_ 120. Pedro makes specialized Birthday cards. He earns \$2.50 per card. If he sells an average of 49 a month. How much does he earn in a year?
- a. \$1470
  - b. \$2940
  - c. \$122.50
  - d. \$122.05

Name: \_\_\_\_\_

ID: A

\_\_\_ 121. Anabella earns \$14.75 per hour at her job. She works 37.5 hours per week. If she is paid semimonthly, how much does she get paid on each paycheck.

- a. \$553.13
- b. 1198.44
- c. \$1106.25
- d. \$2396.88

\_\_\_ 122. Compute the amount of simple interest for \$3000 at 2.5% for 9 months.

- a. \$675
- b. \$67500
- c. \$562.50
- d. \$56.25

\_\_\_ 123. Calculate the Principal required to earn \$360 of simple interest at a rate of 6% for 12 years.

- a. \$5
- b. \$720 000
- c. \$500
- d. 259.20

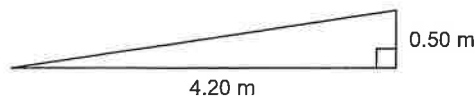
\_\_\_ 124. Calculate the final amount on an investment of \$1200 at 3% compounded monthly for 10 years.

- a. \$1619.22
- b. \$12 364.99
- c. \$23 229.78
- d. \$1230.33

\_\_\_ 125. Which of the folloiwng compounding periods will earn the most interest on a principal of \$5000 at a rate of 7% over 12 years.

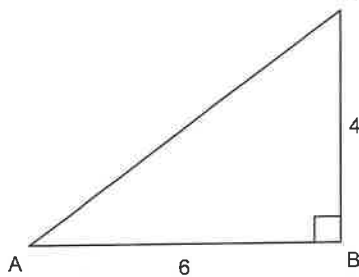
- a. annually
- b. semi-annually
- c. quarterly
- d. monthly

\_\_\_ 126. Determine the length of this wheelchair ramp to the nearest hundredth of a metre.



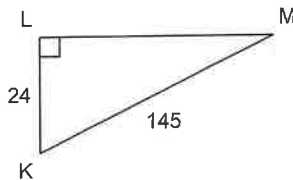
- a. 4.27 m
- b. 6.53 m
- c. 4.17 m
- d. 4.23 m

127. Determine  $\tan A$  and  $\tan C$ .



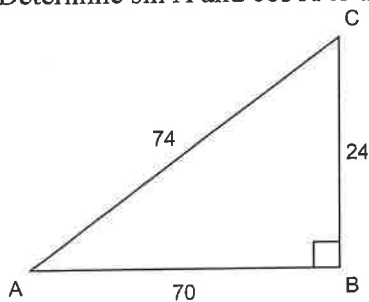
- a.  $\tan A = 1.5$ ;  $\tan C = 0.\overline{6}$   
 b.  $\tan A = 0.\overline{6}$ ;  $\tan C = 0.8321\dots$   
 c.  $\tan A = 0.\overline{6}$ ;  $\tan C = 1.5$   
 d.  $\tan A = 0.5547\dots$ ;  $\tan C = 1.5$

128. Determine the tangent ratio for  $\angle K$ .



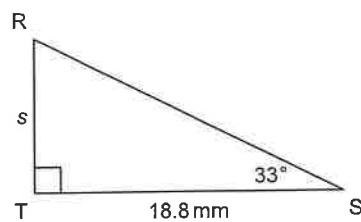
- a.  $\frac{24}{143}$   
 b.  $\frac{24}{145}$   
 c.  $\frac{145}{24}$   
 d.  $\frac{143}{24}$

129. Determine  $\sin A$  and  $\cos A$  to the nearest tenth.



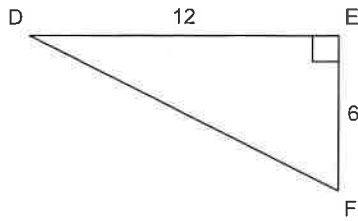
- a.  $\sin A = 3.1$ ;  $\cos A = 0.9$   
 b.  $\sin A = 0.9$ ;  $\cos A = 0.3$   
 c.  $\sin A = 0.3$ ;  $\cos A = 1.1$   
 d.  $\sin A = 0.3$ ;  $\cos A = 0.9$

130. Determine the length of side  $s$  to the nearest tenth of a millimetre.

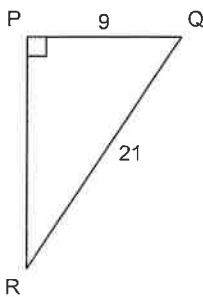


- a. 15.8 mm  
 b. 28.9 mm  
 c. 10.2 mm  
 d. 12.2 mm

- \_\_\_ 131. Determine the measure of  $\angle D$  to the nearest tenth of a degree.

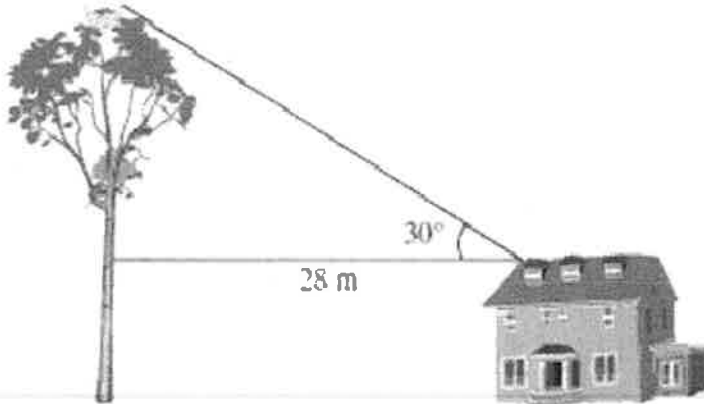


- a.  $26.6^\circ$       b.  $30.0^\circ$       c.  $60.0^\circ$       d.  $63.4^\circ$
- \_\_\_ 132. Determine the measure of  $\angle Q$  to the nearest tenth of a degree.



- a.  $64.6^\circ$       b.  $66.8^\circ$       c.  $25.4^\circ$       d.  $23.2^\circ$
- \_\_\_ 133. A 10 metre tall farmhouse is located 28.0 m away from a tree with an eagle's nest. The angle of elevation from the roof of the farmhouse to the eagle's nest is  $30^\circ$ .

**What is the height of the eagle's nest?**



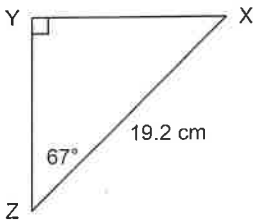
- a. 16 m      c. 26 m  
b. 24 m      d. 48 m

134. Calculate the angle of inclination, to the nearest tenth of a degree, of a road with a grade of 7% (a rise of 7m with a horizontal change of 100m).



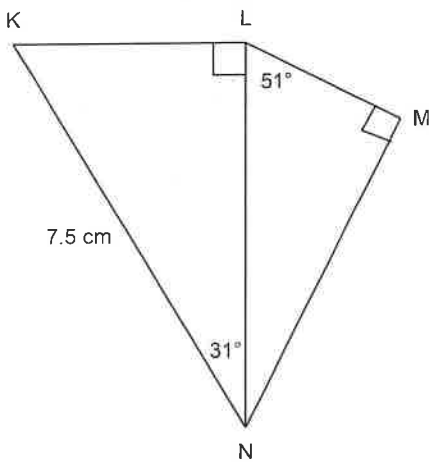
- a.  $86^\circ$       b.  $8^\circ$       c.  $4^\circ$       d.  $100^\circ$

135. Determine the length of XY to the nearest tenth of a centimetre.



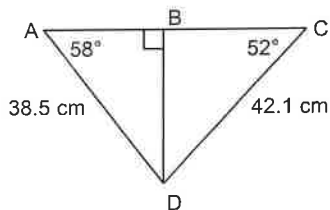
- a. 7.5 cm      b. 17.7 cm      c. 45.2 cm      d. 20.9 cm

136. Determine the length of MN to the nearest tenth of a centimetre.



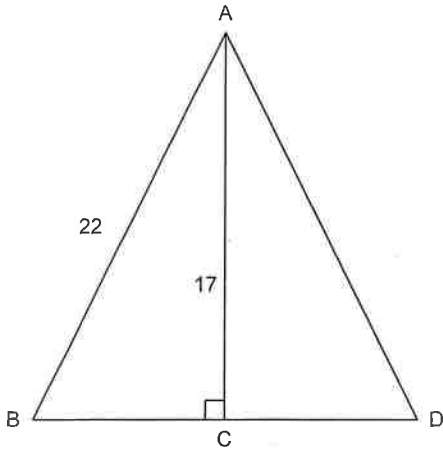
- a. 5.0 cm      b. 3.0 cm      c. 2.4 cm      d. 4.0 cm

137. Determine the length of AC to the nearest tenth of a centimetre.

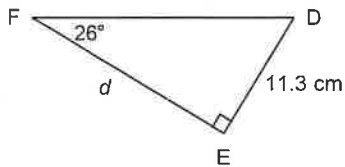


- a. 65.8 cm      b. 115.5 cm      c. 30.8 cm      d. 46.3 cm

138. A ladder leans against the side of a building. The top of the ladder is 4.5 m from the ground. The base of the ladder is 1.5 m from the wall. What angle, to the nearest degree, does the ladder make with the ground?
- a.  $72^\circ$       b.  $18^\circ$       c.  $16^\circ$       d.  $76^\circ$
139. Determine the measure of  $\angle B$  to the nearest tenth of a degree.



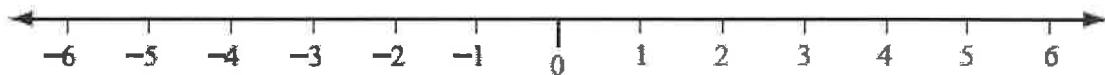
- a.  $78.8^\circ$       b.  $37.7^\circ$       c.  $50.6^\circ$       d.  $39.4^\circ$
140. Determine the length of side  $d$  to the nearest tenth of a centimetre.



- a. 25.8 cm      b. 23.2 cm      c. 12.6 cm      d. 5.5 cm

### Short Answer

141. Estimate  $\sqrt{21}$  and plot on the number line:



142. Evaluate  $\sqrt{0.04}$

Answer: \_\_\_\_\_



Name: \_\_\_\_\_

ID: A

143. Multiply and Simplify.  $3\sqrt{40} \times 2\sqrt{2}$

Answer: \_\_\_\_\_

144. Determine the least common multiple of 450 and 180.

Answer: \_\_\_\_\_

145. Determine the greatest common factor of 132 and 352 and

Answer: \_\_\_\_\_

146. Determine the greatest common factor of 735 and 1715.

Answer: \_\_\_\_\_

147. Determine the least common multiple of 1125 and 1575.

Answer: \_\_\_\_\_

148. Simplify (write as a mixed radical)

$$2\sqrt{162}$$

Answer: \_\_\_\_\_

149. Write as an Entire Radical:

$$3^3\sqrt{35}$$

Answer: \_\_\_\_\_

150. Simplify  $\frac{3^{-6} \times 3^5}{3^{-1}}$

Answer: \_\_\_\_\_

151. Evaluate  $(-5)^{-2}$  without using a calculator.

Answer: \_\_\_\_\_

152. Simplify  $\frac{-3a^{-3}b^{-7}c^{-6}}{12a^{-6}b^{-3}c^{-3}}$ . Write using powers with positive exponents.

Answer: \_\_\_\_\_

153. Simplify  $\left(\frac{3}{4}m^{-3}n^{-7}p^{-2}\right)^{-4}$

Answer: \_\_\_\_\_

154. Evaluate  $\left(\frac{8}{27}\right)^{-\frac{2}{3}}$  without using a calculator.

Answer: \_\_\_\_\_

155. Evaluate  $(0.027)^{-\frac{1}{3}}$  without using a calculator.

Answer: \_\_\_\_\_

156. Simplify  $\sqrt[3]{27^2}$

Answer: \_\_\_\_\_

Name: \_\_\_\_\_

ID: A

157.  $\frac{\sqrt{27}}{\sqrt[3]{9}}$

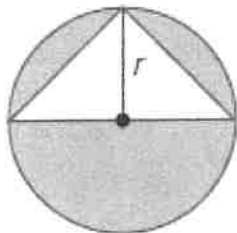
Answer: \_\_\_\_\_

158. Factor:  $3x^2 + 8x + 4$

159. Expand and simplify:  $(x - 4)^3$

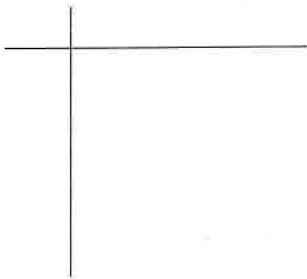
160. Factor:  $49s^2 - 64t^2$

161. Find the area of the shaded region in terms of  $r$ . Write your answer in factored form.



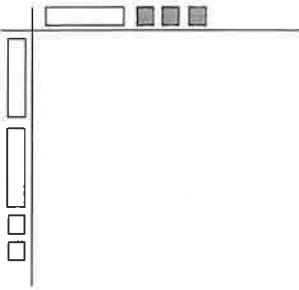
162. Factor using Algebra Tiles. Fill in table and write answer for full marks. /2

Factor:  $x^2 + 9x + 8$



Answer: \_\_\_\_\_

163. Multiply using algebra tiles. Fill in table and write answer for full marks. /2



This shows: \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

164. Use the numbers below.

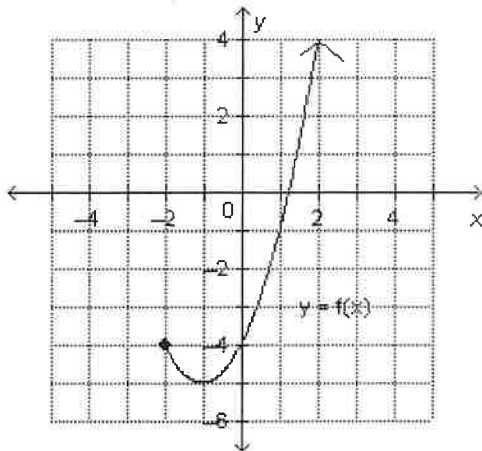
-7, 0, 3, -5, 6, 0

- a) Write a set of ordered pairs that represents a function.
- b) Write a set of ordered pairs that does not represent a function.

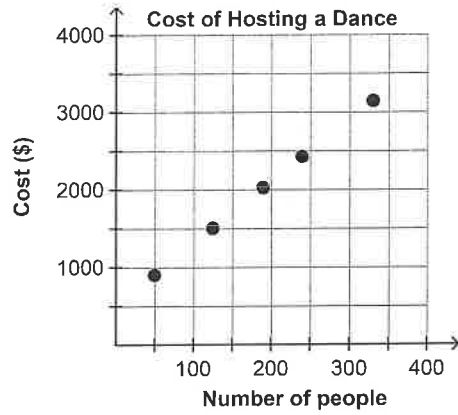
165. Suppose you were to graph the data in this table of values. Would you join the points? Justify your answer.

Number of Pop Bottles, <i>n</i>	Refund, <i>r</i> (\$)
5	1.00
12	2.40
17	3.40
24	4.80
30	6.00

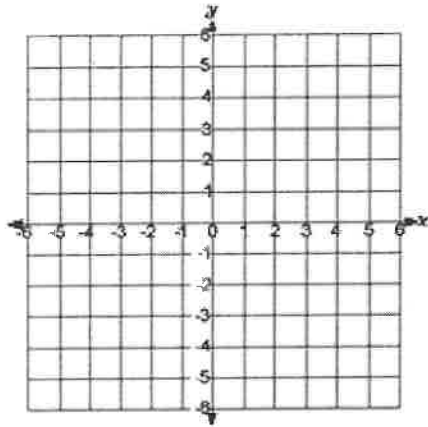
166. Determine the domain and range of the graph of this function using inequalities.



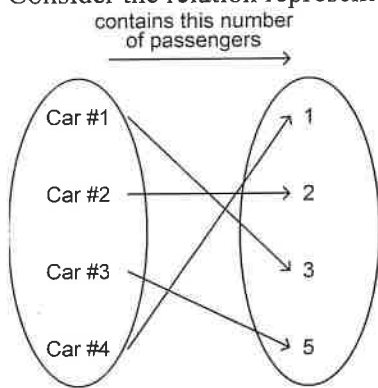
167. Explain why the points on this graph are not joined.



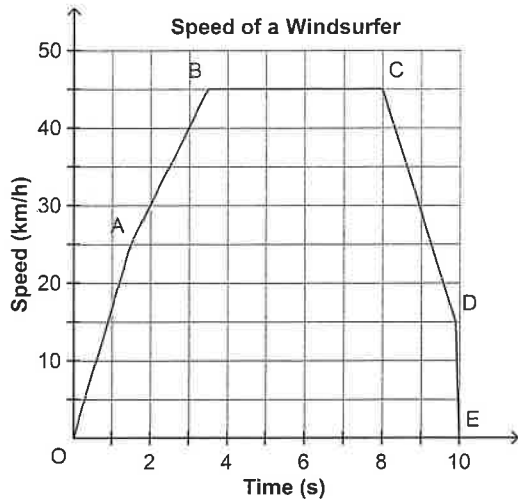
168. Graph  $x - 2y = 4$



169. Consider the relation represented by this arrow diagram. Represent the relation as a set of ordered pairs.



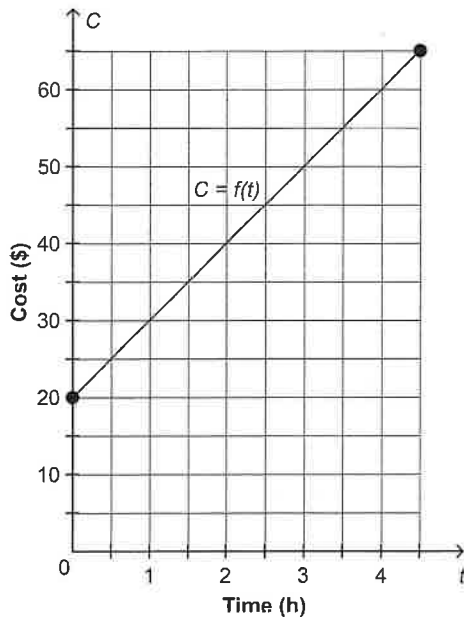
170. The graph shows the speed of a windsurfer as a function of time.



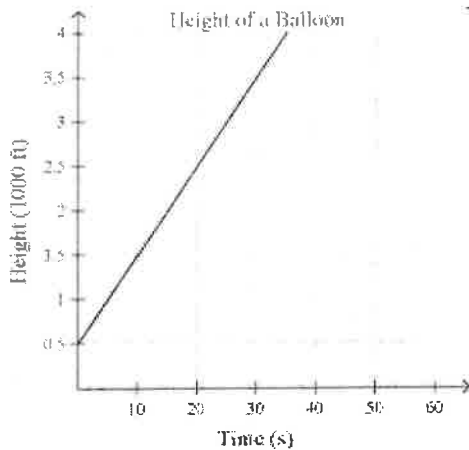
- a) For how long did the windsurfer travel at a speed of 45 km/h?
- b) How long did the windsurfer's ride last?

171. This graph shows cost,  $C$  dollars, as a function of time,  $t$  hours.

- a) What is the time when the cost is \$50?
- b) Does this question use interpolation or extrapolation?



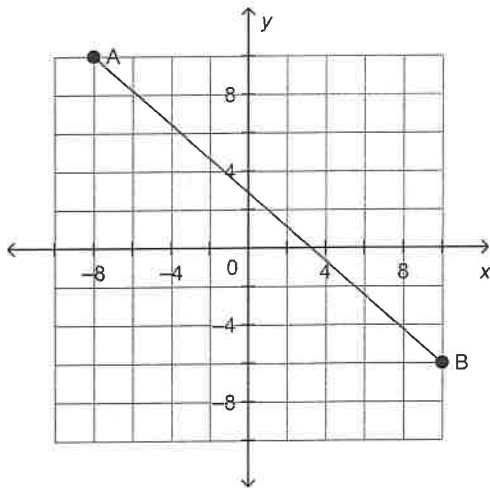
172. Use the graph to answer the questions below:



- a) How high (in feet) is the balloon after 60 seconds?  
 b) Is this an interpolation or extrapolation question?

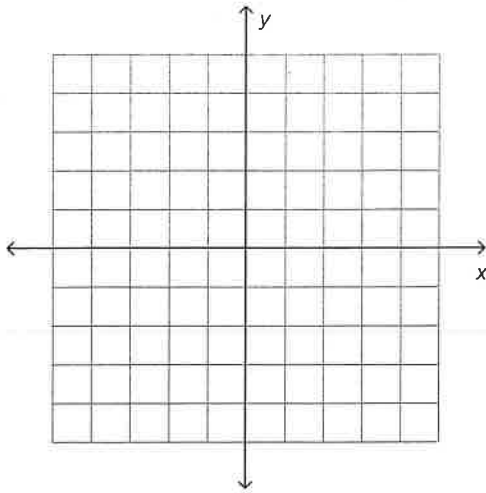
173. The slopes of two lines are  $\frac{5}{8}$  and  $\frac{5}{8}$ . Are the two lines parallel, perpendicular, or neither?

174. Determine the slope of this line segment. **Hint:** Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$



175. Determine the slope of the line that passes through  $(-15, -9)$  and  $(8, 19)$ . **Hint:** Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$

176. Graph the line with  $y$ -intercept 4 and slope  $-3$ .



177. The total cost for a cheese of the month club is a flat fee of \$5, plus \$6.50 per month. Write an equation to represent the total cost,  $C$  dollars, for  $m$  months of membership.
178. The coordinates of the endpoints of segments are given below. Are the two line segments parallel, perpendicular, or neither? **Hint:** Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$
- a) R(-1, 4), S(-6, -2) and T(3, -1), U(9, 4)
- b) F(-7, -8), G(-4, 1) and V(-2, 5), W(7, 2)
179. A 55% acid solution is required for a chemistry lab. The instructor has a 25% stock solution and a 65% stock solution. She needs to make 100 litres of the 55% acid solution. How much of each stock solution should she use?

answer: \_\_\_\_\_

180. A plane flew a distance of 450 km in 5 hours when travelling in a tailwind. The return trip took 6 hours against the same wind. Find the speed of the plane and the wind speed.

answer: \_\_\_\_\_



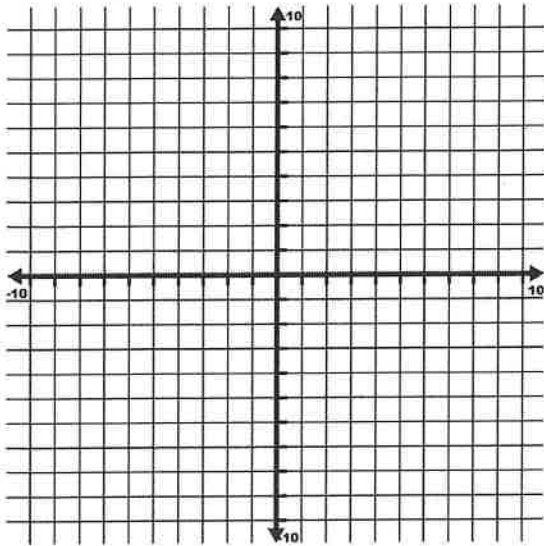
Name: \_\_\_\_\_

ID: A

181. Solve the following system of equations by graphing (3 marks)

$$y = \frac{-2}{3}x - 5$$

$$y - 2 = \frac{5}{2}(x + 1)$$



182. Find the sum.  $\sum_{k=1}^4 3k - 1$

sum = \_\_\_\_\_

183. Find the indicated term number:

$$a = 2.5, d = -1.25, t_{38}$$

Answer: \_\_\_\_\_

184. Find the number of terms in the arithmetic sequence:

$$a = 16, d = 3, t_n = 73$$

Answer: \_\_\_\_\_

Name: \_\_\_\_\_

ID: A

185. Rajet works at her afterschool job at subway and earns \$10.45 per hour. If she works 12 hours per week, how much money does she make per month?

Answer: \_\_\_\_\_

186. Calculate the rate of interest required for \$4500 to earn \$240.41 in 300 days. Round your answer to the nearest tenth of a percent.

Answer: \_\_\_\_\_

187. Find the interest earned if \$1150 is deposited in an account paying 13% interest compounded semi-monthly for 5 years.

Answer: \_\_\_\_\_

188. What Principal is required to earn a final amount of \$10 000 in an account earning 6% interest compounded quarterly for 10 years?

Answer: \_\_\_\_\_

189. Use the following chart to answer the following questions:

Federal Personal Income tax brackets for 2017:

Annual Gross Income	Tax Rate
\$45,916 or less	15%
\$45,916 to \$91,831	20.5%
\$91,831 to \$142,353	26%
\$142,353 to \$202,800	29%
More than \$202,800	33%

Calculate the amount of federal income tax owed for the following annual incomes after exemptions:

a) \$38 295

Answer: \_\_\_\_\_

b) \$95 000

Answer: \_\_\_\_\_

190.

The MSP monthly premiums for BC effective January 1, 2016 are shown.

Adjusted Net Income	One Person	Family of Two	Family of Three or More
\$0 - \$22 000	\$0.00	\$0.00	\$0.00
\$22 001 - \$24 000	\$12.80	\$23.20	\$25.60
\$24 001 - \$26 000	\$25.60	\$46.40	\$51.20
\$26 001 - \$28 000	\$38.40	\$69.60	\$76.80
\$28 001 - \$30 000	\$51.20	\$92.80	\$102.40
Over \$30 000	\$75.00	\$136.00	\$150.00

- a) Determine the monthly premium for a family of four earning \$27 000
- b) Determine the yearly premium for a family of four earning \$ 27 000
- c) Determine the percentage of net annual income that must be paid for MSP for a family of four earning \$27000. Round your answer to the nearest tenth of a percent.

191. Use the table to answer the following questions:

2017 Canadian Pension Plan Rates

Maximum Pensionable Earnings	\$55 300.00
Less: Basic Exemption	\$3500.00
Maximum Earnings on which contributions are based	\$51 800.00
Rate	4.95%
Maximum Contribution	\$2564.10

- a) Find the CPP deduction for an income of \$39 000
- b) Find the CPP deduction for an income of \$64 000

192. Use the table to answer the following questions:

2017 Employment Insurance Rates

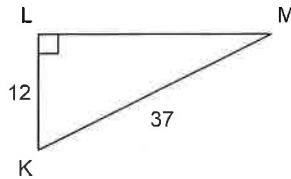
Maximum Pensionable Earnings	\$51 300.00
Rate	1.63%
Maximum Contribution	\$836.19

a) Determine the amount of EI for an income of \$70 000

b) Determine the amount of EI for an income of \$50 000

193.  $\tan B = 1.2$ ; determine the measure of  $\angle B$  to the nearest tenth of a degree.

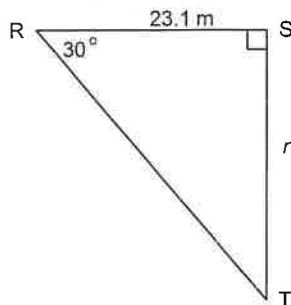
194. a) For  $\angle M$  in the triangle below, label the hypotenuse and the opposite and adjacent sides.



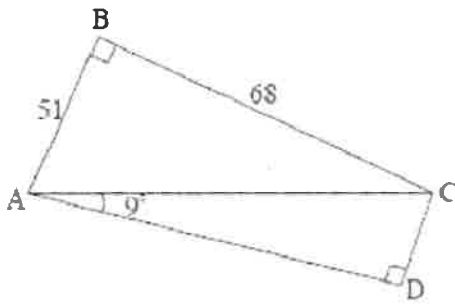
b) Find  $\angle M$

195. A ladder is 6 m long. It leans against a house. The base of the ladder is 1.6 m from the house. What is the angle of inclination of the ladder to the nearest tenth of a degree?

196. Determine the length of side  $r$  to the nearest tenth of a metre.



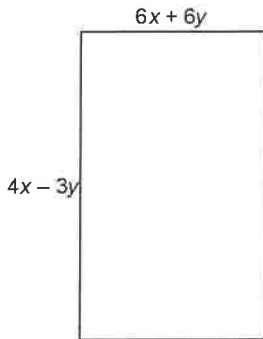
197. Determine the measure of  $\angle BCD$ . Answer to the nearest degree



198. How many degrees do all three angles of a triangle add up to? \_\_\_\_\_°

**Problem**

199. Write a polynomial to represent the area of this rectangle. Simplify the polynomial. Leave your answer in fully expanded form.

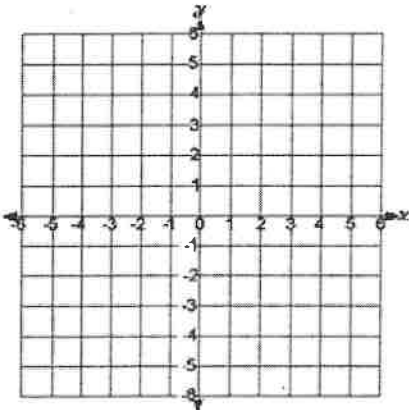


200. Find an integer to replace  $\square$  so that  $x^2 + \square x - 30$  can be factored. How many integers can you find?

(3 marks)

201. Sketch a graph of the linear function  $y = -4x + 4$ .

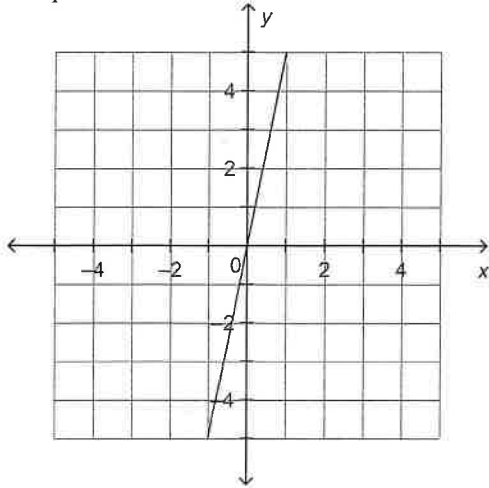
Create a table of values representing at least three coordinates. (2 marks)



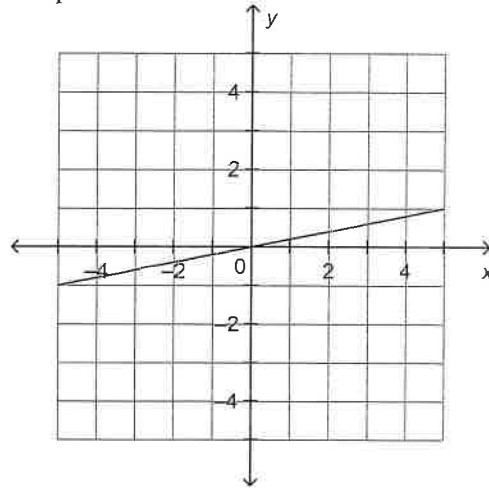
202. Identify the graph below that corresponds to each given slope and  $y$ -intercept. (2 marks)

- a) slope  $-\frac{1}{5}$ ;  $y$ -intercept 0      Graph: \_\_\_\_\_
- b) slope  $-5$ ;  $y$ -intercept  $-4$       Graph: \_\_\_\_\_
- c) slope 5;  $y$ -intercept 0      Graph: \_\_\_\_\_
- d) slope  $\frac{1}{5}$ ;  $y$ -intercept 0      Graph: \_\_\_\_\_

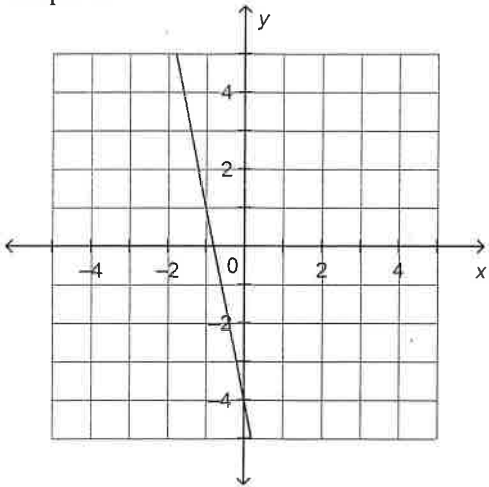
Graph A



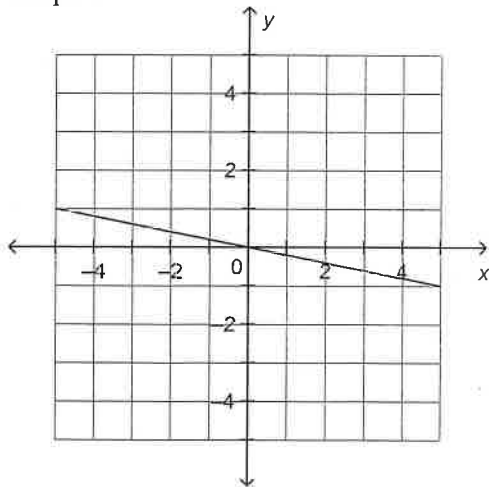
Graph B



Graph C



Graph D

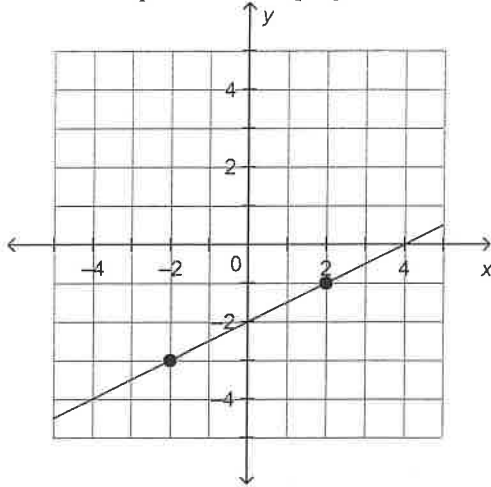


203. Francine runs a T-shirt company. For each order she receives, Francine charges a flat fee of \$35, plus \$8.95 per T-shirt. (3 marks)

- a) Write an equation for the total cost,  $C$  dollars, for ordering  $n$  T-shirts.
- b) Marnell ordered 57 T-shirts. What was the total cost?
- c) Jakub paid a total cost of \$956.85. How many T-shirts did he order?

204. Write an equation in general form for the line that passes through  $A(3, -4)$  and  $B(11, 8)$ .

205. a) Write an equation in slope-point form for this line.



b) Write the equation in part a in slope-intercept form.

c) What is the  $y$ -intercept of this line?

206. Write an equation for the line that passes through  $B(-1, 3)$  and is:

a) parallel to the line  $y = -\frac{7}{3}x - 3$

b) perpendicular to the line  $y = -\frac{7}{3}x - 3$

207. Students at Tahayghen Secondary School sell punch during the school carnival. The number of cups sold,  $n$ , is a linear function of the temperature in degrees Celsius,  $t$ . The students sold 458 cups when the temperature was  $25^\circ\text{C}$ . They sold 534 cups when the temperature was  $29^\circ\text{C}$ .

a) Write an equation in slope-point form to represent this function.

b) Use the equation in part a to determine the approximate temperature when the students sell 325 cups of punch.

208. a) Write a linear system to model the situation:

A sports club charges an initiation fee and a monthly fee. At the end of 4 months, a member had paid a total of \$501. At the end of 9 months, she had paid a total of \$601.

- b) Solve the linear system by **substitution** to solve the related problem:  
What are the initiation fee and the monthly fee? ( 4 marks )

answer: \_\_\_\_\_

209. Use an elimination strategy to solve this linear system. (2 marks)

$$4s - 4c = 20$$
$$12s + 12c = 100$$

answer \_\_\_\_\_

### Other

210. For  $f(x) = 3x - 2$ , find:

a)  $f(4)$

b)  $f(2k)$

c)  $f(3x-1)$

d)  $f(x) = 19$

- 211.

Determine  $f(x) = mx + b$  from the following information (2 marks)

$$f(2) = 4 \text{ and } f(-1) = -4$$



**Math 10 All Practice Tests Combined**  
**Answer Section**

**MULTIPLE CHOICE**

1. C
2. C
3. B
4. B
5. C
6. A
7. C
8. A
9. A
10. D
11. A
12. B
13. D
14. D
15. C
16. B
17. A
18. B
19. B
20. A
21. A
22. B
23. D
24. A
25. D
26. B
27. B
28. A
29. A
30. C
31. A
32. B
33. B
34. C
35. B
36. C
37. D
38. B
39. B

- 40. D
- 41. C
- 42. B
- 43. C
- 44. B
- 45. C
- 46. D
- 47. A
- 48. C
- 49. C
- 50. D
- 51. B
- 52. B
- 53. C
- 54. A
- 55. D
- 56. D
- 57. D
- 58. A
- 59. D
- 60. D
- 61. C
- 62. A
- 63. B
- 64. D
- 65. C
- 66. D
- 67. B
- 68. C
- 69. B
- 70. B
- 71. B
- 72. C
- 73. D
- 74. D
- 75. A
- 76. D
- 77. C
- 78. B
- 79. B
- 80. A
- 81. C
- 82. C
- 83. C
- 84. A

- 85. B
- 86. B
- 87. B
- 88. D
- 89. C
- 90. A
- 91. D
- 92. B
- 93. D
- 94. B
- 95. B
- 96. A
- 97. A
- 98. C
- 99. C
- 100. A
- 101. B
- 102. A
- 103. C
- 104. C
- 105. B
- 106. B
- 107. C
- 108. B
- 109. C
- 110. C
- 111. D
- 112. C
- 113. C
- 114. B
- 115. D
- 116. B
- 117. B
- 118. B
- 119. D
- 120. A
- 121. B
- 122. D
- 123. C
- 124. A
- 125. D
- 126. D
- 127. C
- 128. D
- 129. D

130. D  
 131. A  
 132. A  
 133. C  
 134. C  
 135. B  
 136. A  
 137. D  
 138. A  
 139. C  
 140. B

**SHORT ANSWER**

141. dot between 4 and 5 but slightly closer to 5

142. 0.2

143.  $24\sqrt{5}$

144.  $2^2 \times 3^2 \times 5^2$  or, 900

145. 44

146. 245

147. 7875

148.  $18\sqrt{2}$

149.  $\sqrt[3]{945}$

150. 1

151.  $\frac{1}{25}$

152.  $\frac{a^3}{4b^4c^3}$

153.  $\frac{256}{81} m^{12} n^{28} p^8$

154.  $\frac{9}{4}$

155.  $\frac{10}{3}$

156. 9

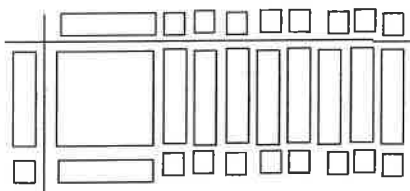
157.  $\sqrt[6]{3^5}$  or  $3^{\frac{5}{6}}$

158.  $(x+2)(3x+2)$

159.  $x^3 - 12x^2 + 48x - 64$

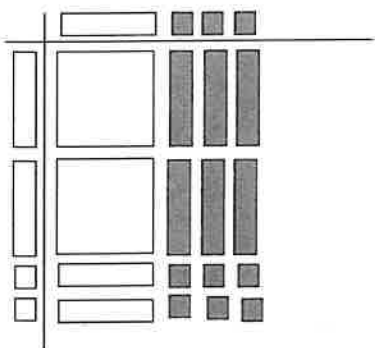
160.  $(7s+8t)(7s-8t)$

161.  $r^2(\pi-1)$



162.

Answer:  $(x+8)(x+1)$



163.

This shows:  $(2x + 2) \times (x - 3) = 2x^2 - 4x - 6$

164. Sample answers

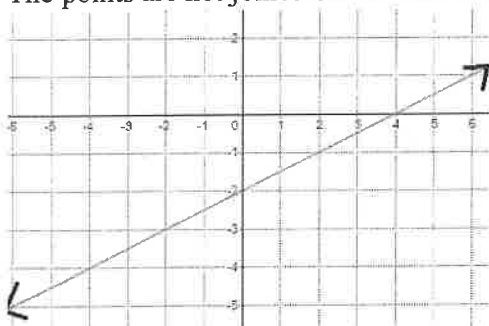
a)  $\{(-7, 0), (3, -5), (6, 0)\}$       b)  $\{(0, -7), (3, -5), (0, 6)\}$

165. The points would not be joined because the data are only valid for whole numbers of pop bottles.

166. Domain:  $x \geq -2$

Range:  $y \geq -5$

167. The points are not joined because the data are only valid for whole numbers of people.



168.

169.  $\{(Car \#1, 3), (Car \#2, 2), (Car \#3, 5), (Car \#4, 1)\}$

170. a) 4.5 s

b) 10 s

171. a) 3.0 h

b) interpolation

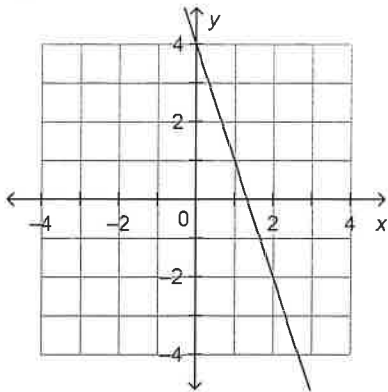
172. a) 6500 feet

b) extrapolation

173. Parallel

174.  $-\frac{8}{9}$

175.  $\frac{28}{23}$



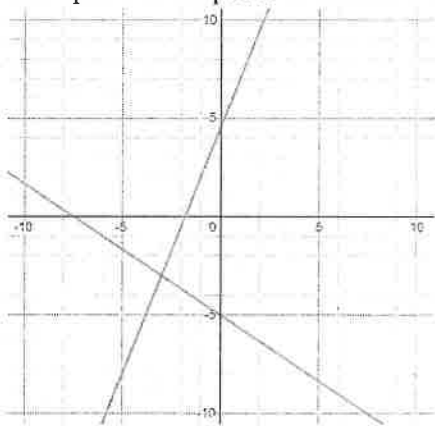
176.

177.  $C = 6.50m + 5$

178. a) Neither  
b) Perpendicular

179. 25 litres of 25% stock solution and 75 litres of 65% stock solution.

180. The speed of the plane is 82.5km/h and the wind speed is 7.5km/h



181.

Solution: (-3,-3)

182.  $2+5+8+11=26$

183. -43.75

184.  $n=20$

185. \$543.40

186. 6.5%

187. Final amount = \$2199.01

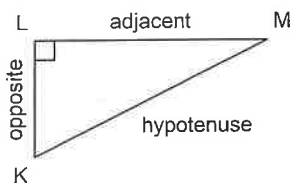
Interest = \$1049.01

188. \$5512.62

189. a) \$5744.25

b) \$17 123.92

190. a) \$76.80  
 b) \$921.60  
 c) 3.4%
191. a)  $35500 \times 0.0495 = \$1757.25$   
 b) \$2564.10 (maximum)
192. a) \$836.19  
 b) \$815.00
193.  $\angle B \doteq 50.2^\circ$
194. a)



- b) 19
195.  $74.5^\circ$
196. 13.3 m
197.  $\angle BCD = 118^\circ$
198.  $180^\circ$

### PROBLEM

199. Use the formula for the area,  $A$ , of a rectangle:

$$A = lw$$

$$A = (4x - 3y)(6x + 6y)$$

$$A = 4x(6x) + 4x(6y) - 3y(6x) - 3y(6y)$$

$$A = 24x^2 + 24xy - 18xy - 18y^2$$

$$A = 24x^2 + 6xy - 18y^2$$

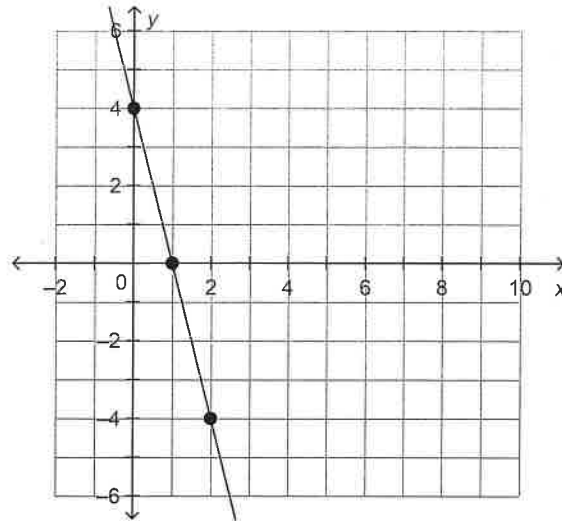
The expression  $24x^2 + 6xy - 18y^2$  represents the area of this rectangle.

200. Find two integers whose product is  $-30$ .

Calculate the sum of each pair.

The integers that can replace  $\square$  so that  $x^2 + \square x - 30$  can be factored are: 1,  $-1$ , 7,  $-7$ , 13,  $-13$ , 29, and  $-29$

201.

202. Graph A: slope 5;  $y$ -intercept 0Graph B: slope  $\frac{1}{5}$ ;  $y$ -intercept 0Graph C: slope  $-5$ ;  $y$ -intercept  $-4$ Graph D: slope  $-\frac{1}{5}$ ;  $y$ -intercept 0

203. a) The flat fee is: \$35

When  $n$  T-shirts are ordered, the additional cost is:  $8.95n$  dollarsSo, an equation is:  $C = 8.95n + 35$ 

b) The total cost was \$545.15.

c) Jakub ordered 103 T-shirts.

204.  $3x - 2y - 17 = 0$ 205. a) In slope-point form, the equation of the line is:  $y + 3 = \frac{1}{2}(x + 2)$  OR using another pointb) In slope-intercept form, the equation of the line is:  $y = \frac{1}{2}x - 2$ From the equation, the  $y$ -intercept is  $-2$ .206. a)  $y - 3 = -\frac{7}{3}(x + 1)$ b)  $y - 3 = \frac{3}{7}(x + 1)$



207. a)  $n = f(t)$ , so two points on the graph have coordinates C(25, 458) and D(29, 534).

Use this form for the equation of a linear function:

$$\frac{n - n_1}{t - t_1} = \frac{n_2 - n_1}{t_2 - t_1}$$

Substitute:  $n_1 = 458$ ,  $t_1 = 25$ ,  $n_2 = 534$ , and  $t_2 = 29$

$$\frac{n - 458}{t - 25} = \frac{534 - 458}{29 - 25}$$

$$\frac{n - 458}{t - 25} = 19$$

$$(t - 25) \left( \frac{n - 458}{t - 25} \right) = 19(t - 25)$$

$$n - 458 = 19(t - 25)$$

In slope-point form, the equation that represents this function is:  $n - 458 = 19(t - 25)$

b) Use:

$$n - 458 = 19(t - 25)$$

Substitute:  $n = 325$

$$n - 458 = 19(t - 25)$$

$$325 - 458 = 19(t - 25)$$

$$-133 = 19t - 475$$

$$342 = 19t$$

$$t = 18$$

When the students sell 325 cups of punch, the approximate temperature is 18°C.

208. a) Let  $f$  dollars represent the initiation fee, and  $m$  dollars represent the monthly fee.  
The cost after 4 months was \$501.

So, the first equation is:

$$f + 4m = 501$$

The cost after 9 months was \$601.

So, the second equation is:

$$f + 9m = 601$$

The linear system is:

$$f + 4m = 501 \quad (1)$$

$$f + 9m = 601 \quad (2)$$

- b) Solve for  $f$  in equation (1).

$$f + 4m = 501 \quad (1)$$

$$f = 501 - 4m$$

Substitute  $f = 501 - 4m$  in equation (2).

$$f + 9m = 601 \quad (2)$$

$$501 - 4m + 9m = 601$$

$$5m = 601 - 501$$

$$m = \frac{100}{5}$$

$$m = 20$$

Substitute  $m = 20$  in equation (1).

$$f + 4m = 501 \quad (1)$$

$$f + 4(20) = 501$$

$$f + 80 = 501$$

$$f = 501 - 80$$

$$f = 421$$

The initiation fee is \$421 and the monthly fee is \$20.

209.  $s = \frac{20}{3}$  and  $c = \frac{5}{3}$

## OTHER

210. a) 10  
b)  $6k - 2$   
c)  $9x - 5$   
d) 7

211.  $f(x) = \frac{8}{3}x - \frac{4}{3}$