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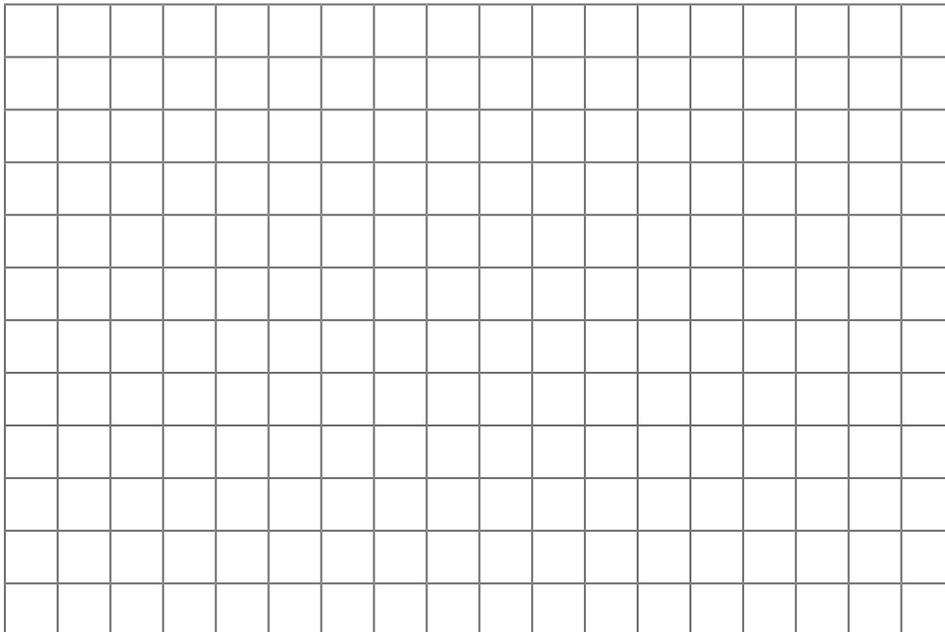
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Lesson 9.3 Real-World Problems: Graphing

Solve.

1. The number of figurines, d , that Jenna can paint at h hours is given by $d = 12h$. Graph the relationship between h and d . Use 2 units on the horizontal axis to represent 1 hour and 1 unit on the vertical axis to represent 6 figurines.

| | | | | | |
|---|----|---|----|---|---|
| Time (h hours) | 1 | 2 | 3 | 4 | 5 |
| Number of Figurines (d) | 12 | | 36 | | |



- What type of graph is it?
- How many figurines can Jenna paint in 2.5 hours?
- How long will it take Jenna to paint 54 figurines?
- If Jenna has to paint at least 48 figurines, how many hours will she need to paint? Express your answer in the form of an inequality where h stands for the amount of time.
- Name the dependent and independent variables.

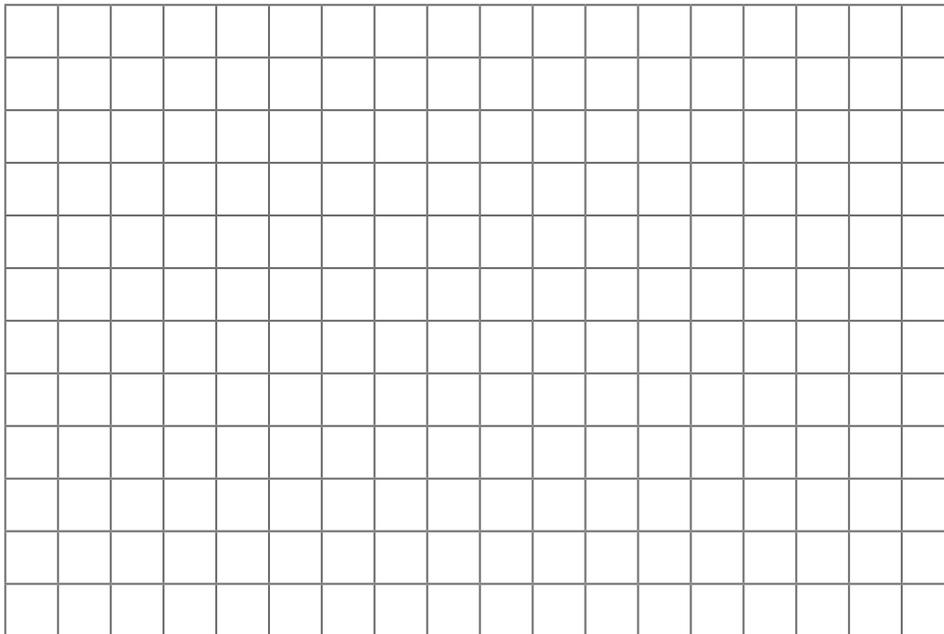
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2. Water is being drained from a fish tank. The water level y centimeters, at time x minutes, is given by $y = 60 - 5x$. Complete the table. Graph the relationship between x and y . Use 1 unit on the horizontal axis to represent 1 minute and 2 units on the vertical axis to represent 10 centimeters.

a)

| | | | | | |
|---|----|---|---|----|----|
| Time (x minutes) | 2 | 4 | 6 | 8 | 10 |
| Water Level (y centimeters) | 50 | | | 20 | |



- b) What is the water level at 3 minutes?
- c) In how many minutes will the water level be 25 centimeters?
- d) How long will it take to drain all the water from the tank?
- e) What is the average drainage rate of the fish tank?

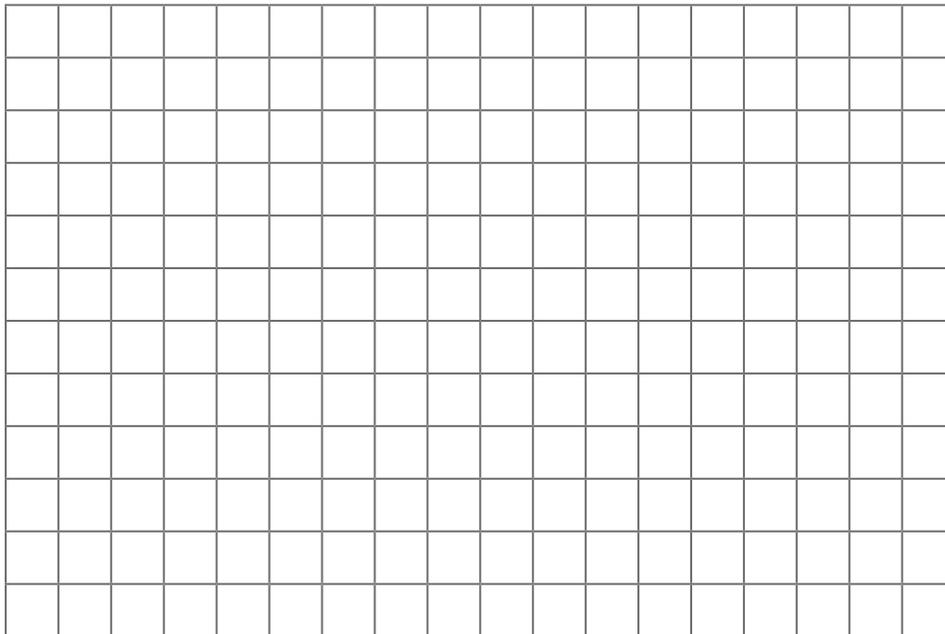
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3. The fee C dollars a certain electrician charges is given by $C = 30t + 20$, where t is the number of hours the electrician spends on the job. Complete the table. Graph the relationship between C and t . Use 2 units on the horizontal axis to represent 1 hour and 1 unit on the vertical axis to represent \$20.

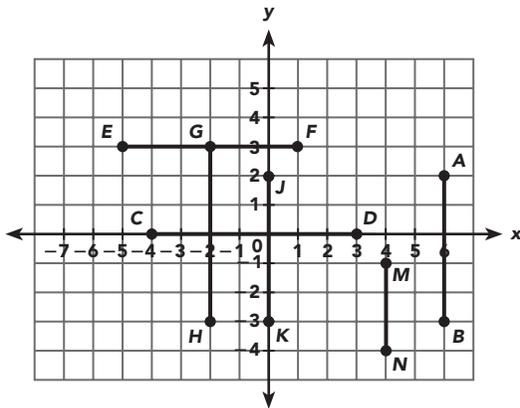
a)

| | | | | | |
|--------------------------------------|----|----|---|---|---|
| Time (t hours) | 0 | 1 | 2 | 3 | 4 |
| Cost (C dollars) | 20 | 50 | | | |

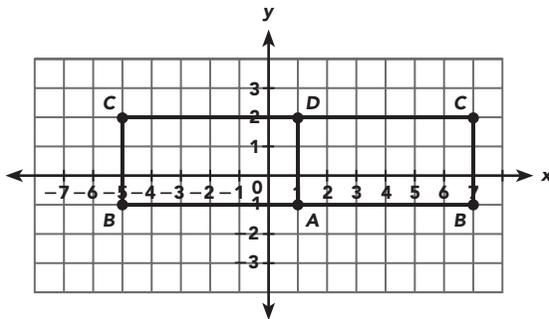


- b) Find the fee the electrician charges for a 1.5-hour job.
- c) The electrician charges \$95 for a job. Based on the graph, how many hours did it take the electrician to complete the job?
- d) What is the electrician's average hourly rate if the electrician is paid \$95 for a job?
- e) What is the minimum fee the electrician charges for any job? Express your answer in the form of an inequality in terms of C , where C stands for the amount of money.

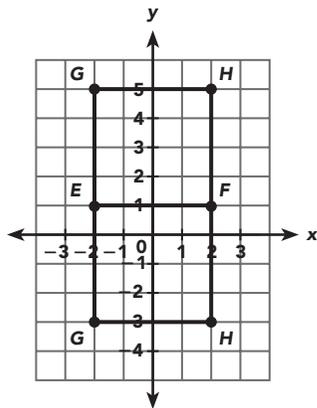
6. $MN = 3$ units



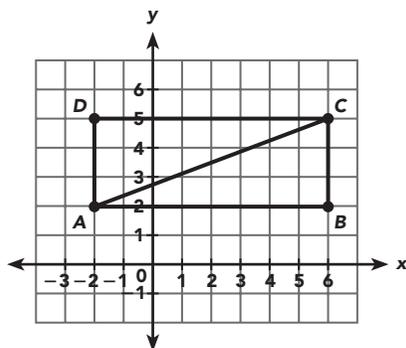
7. a) $B(7, -1), C(7, 2)$
 b) $B(-5, -1), C(-5, 2)$



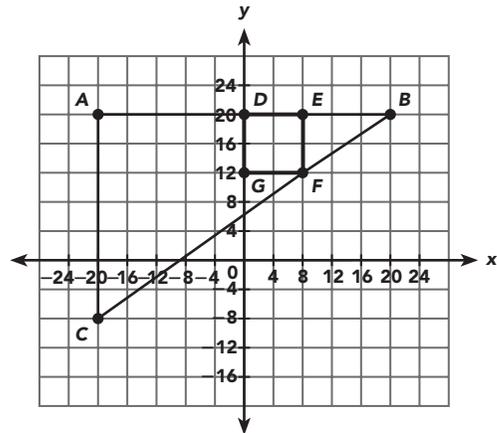
8. a) $G(-2, 5), H(2, 5)$
 b) $G(-2, -3), H(2, -3)$



9. a) right scalene triangle
 b) $D(-2, 5)$



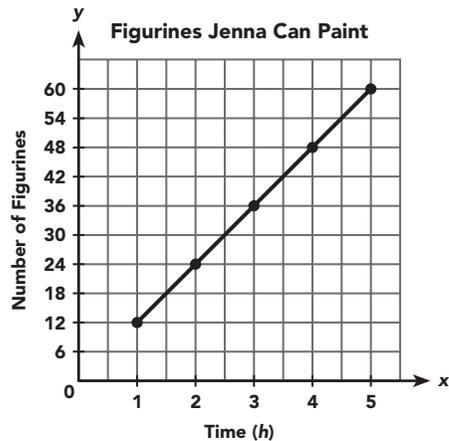
10. $P(-20, 10), Q(5, 10), R(5, -15), S(25, -15), T(25, -25), U(-20, -25)$
 11. 155 feet
 12. $V(10, -15), W(15, -15)$
 13. 1,075 square feet
 14. $A(-20, 20), B(20, 20), C(-20, -8)$
 15. $D(0, 20), E(8, 20), F(8, 12), G(0, 12)$



16. $40 + 49 + 28 = 117$ yards
 The perimeter of the playground is approximately 117 yards.
 17. $117 - 12 = 105$
 $105 \div 5 = 21$ seconds

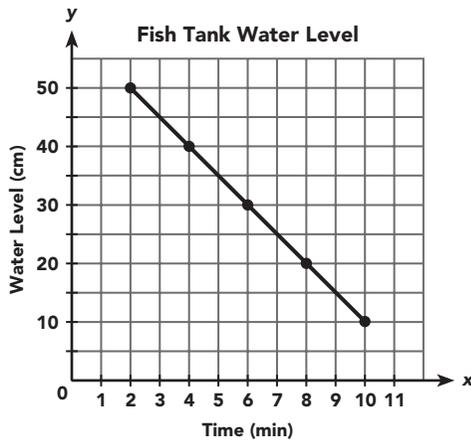
Lesson 9.3

1. 24; 48; 60

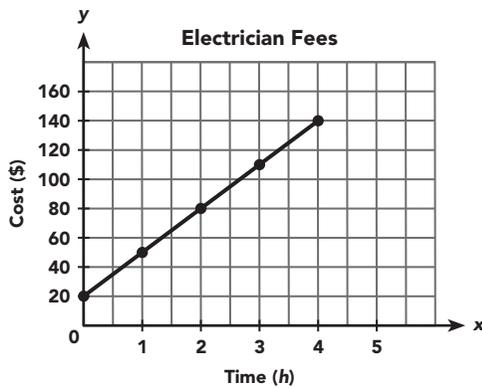


- a) linear/straight line graph
 b) 30 figurines
 c) 4.5 hours
 d) $h \geq 4$
 e) d is dependent variable, and h is independent variable.

2. a) 40; 30; 10



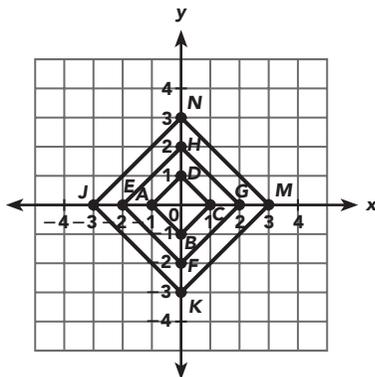
- b) 45 centimeters
 c) 7 minutes
 d) 12 minutes
 e) 5 centimeters per minute
3. a) 80; 110; 140



- b) \$65
 c) 2.5 hours
 d) $95 \div 2.5 = 38$
 \$38 per hour
 e) $C \geq 20$

Brain @ Work

1. a)



b) Area of $ABCD = \frac{1 \cdot 2}{2} \cdot 2 = 2 \text{ cm}^2$

Area of $EFGH = \frac{1 \cdot 2}{2} \cdot 2 = 8 \text{ cm}^2$

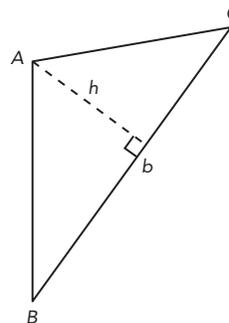
Area of $JKMN = \frac{3 \cdot 6}{2} \cdot 2 = 18 \text{ cm}^2$

- c) The area of figure $ABCD$ is 2 times the square of 1.
 The area of figure $EFGH$ is 2 times the square of 2.
 The area of figure $JKMN$ is 2 times the square of 3.
 $1^2 \times 2 = 2$
 $2^2 \times 2 = 8$
 $3^2 \times 2 = 18$

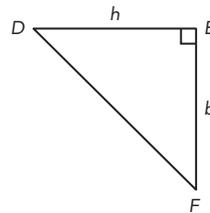
Chapter 10

Lesson 10.1

- Answers vary. Sample: base: AB ; height: AC
- Answers vary. Sample: base: PR ; height: QT
- Answers vary. Sample:



4. Answers vary. Sample:



5. Answers vary. Sample:

