Name: _____ Date: _____

Lesson 9.2 Length of Line Segments

Plot each pair of points on the coordinate plane below. Connect the points to form a line segment and find its length.

1. A (6, 2) and B (6, −3)

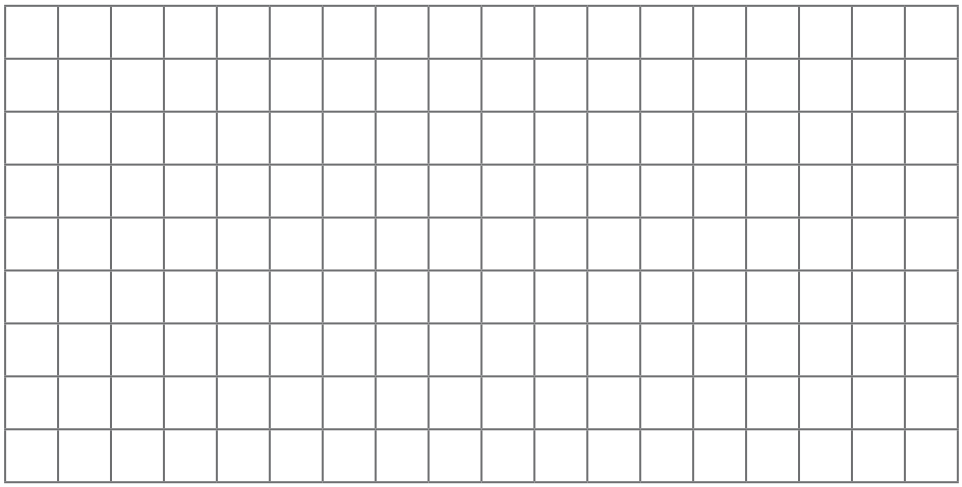
2. C (−4, 0) and D (3, 0)

3. E (−5, 3) and F (1, 3)

4. G (−2, 3) and H (−2, −3)

5. J (0, 2) and K (0, −3)

6. M (4, −1) and N (4, −4)

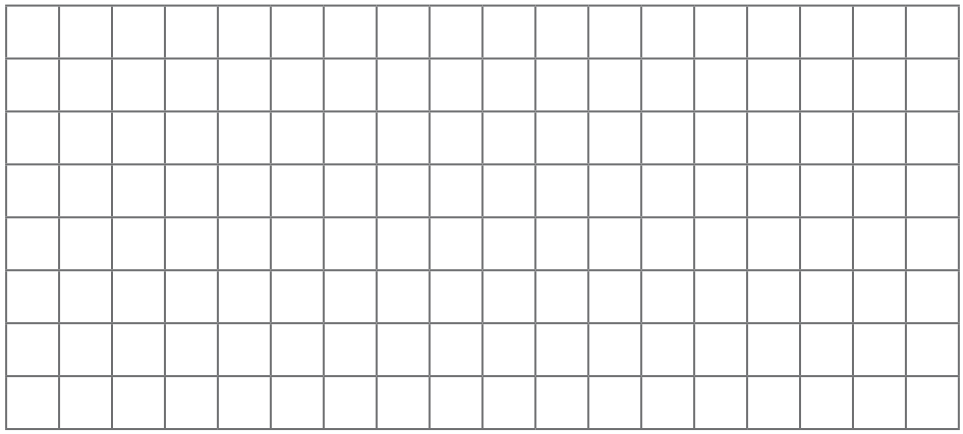


Find the coordinates.

7. Rectangle $ABCD$ is plotted on a coordinate plane. The coordinates of point A are (1, −1), and the coordinates of point D are (1, 2). Each unit on the coordinate plane represents 1 centimeter, and the perimeter of rectangle $ABCD$ is 18 centimeters. Find the coordinates of points B and C given these conditions:

a) Points B and C are to the right of points A and D.

b) Points B and C are to the left of points A and D.



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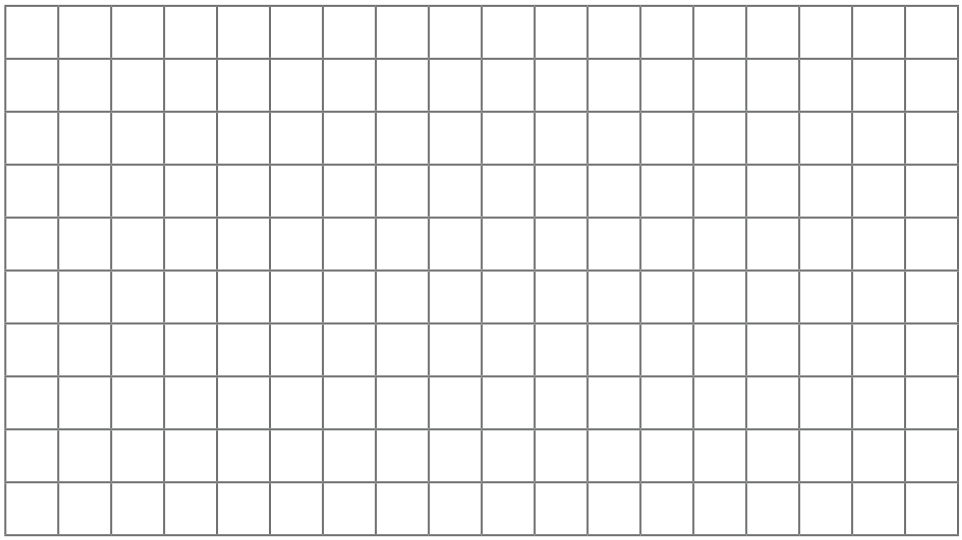
8. Square *EFHG* is plotted on a coordinate plane. The coordinates of point *E* are (−2, 1) and the coordinates of point *F* are (2, 1). Find the coordinates of points *G* and *H* given these conditions:

a) Points *G* and *H* are above points *E* and *F*.

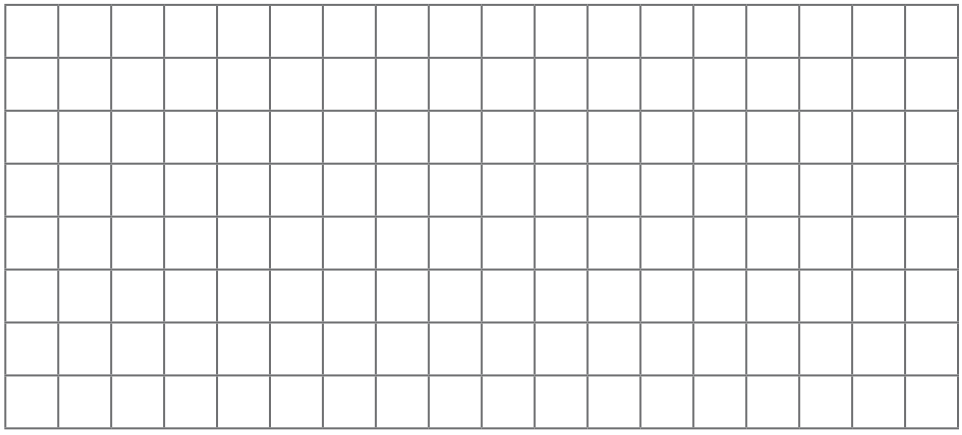
b) Points *G* and *H* are below points *E* and *F*.



9. Triangle *ABC* is plotted on a coordinate plane. The coordinates of point *A* are (−2, 2), the coordinates of point *B* are (6, 2), and the coordinates of point *C* are (6, 5).

a) What type of triangle is triangle *ABC*?

b) Figure *ABCD* is a rectangle. Plot point *D* on the coordinate plane and give its coordinates.



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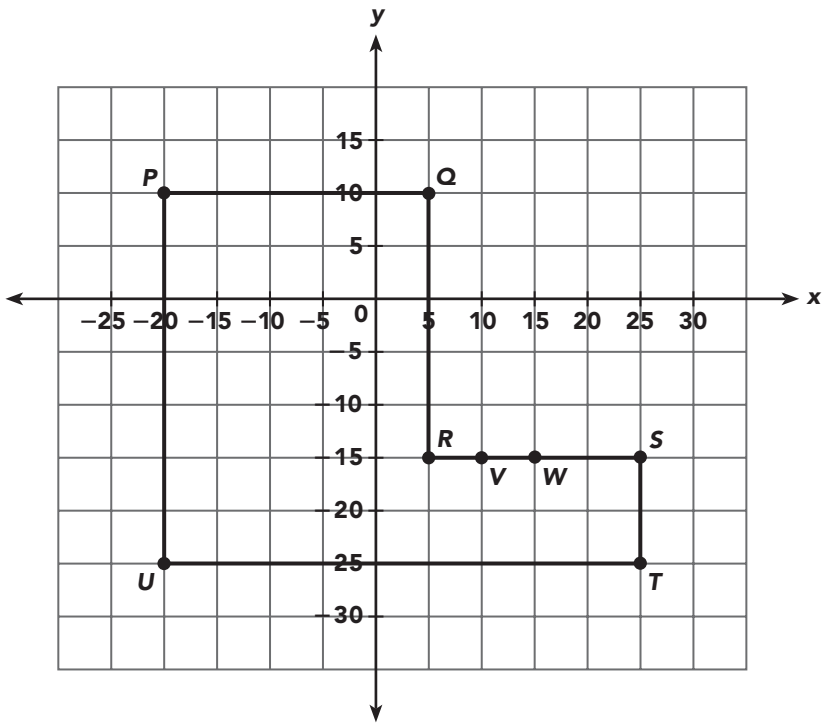
In the diagram, figure *PQRSTU* represents a field. The side length of each grid square is 5 feet. Use the diagram to answer questions 10 to 13.



10. Give the coordinates of points *P*, *Q*, *R*, *S*, *T*, and *U*.

11. James and Rita build a picket fence around the field. They leave a 5-foot opening for the gate. What is the total length of the fence?

12. The gate, $\overline{VW}$, lies on $\overline{RS}$ and is 10 feet from point *S*. Give the coordinates of points *V* and *W*.

13. Find the area of the field.

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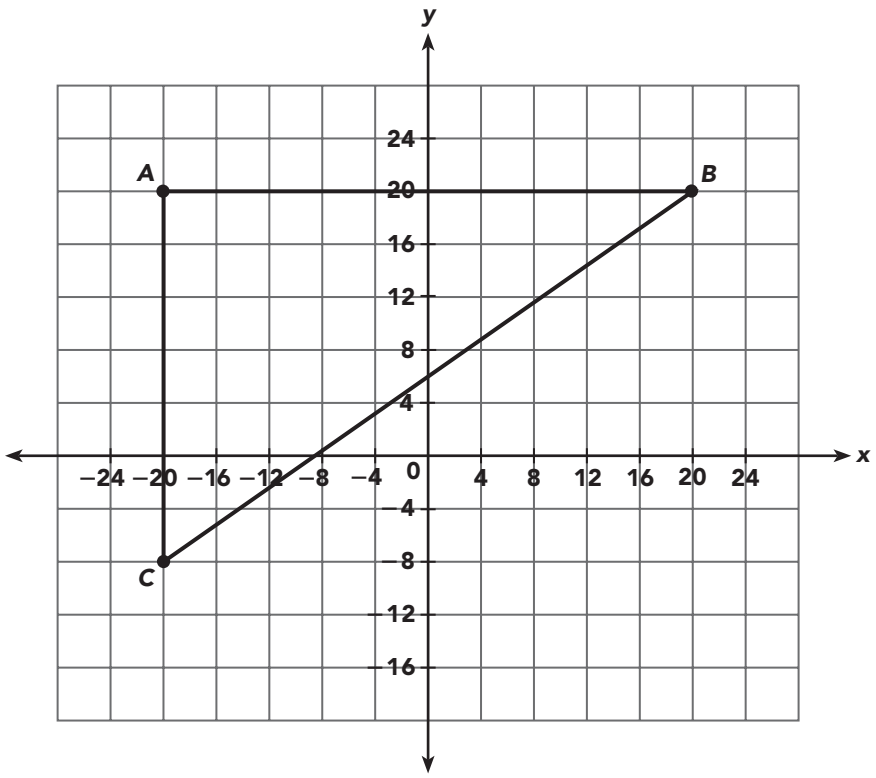
In the diagram, figure *ABC* represents a playground. The side length of each grid square is 4 yards. Use the diagram to answer questions 14 to 17.



14. Give the coordinates of points *A*, *B*, and *C*.

15. There is a square sandbox *DEFG* in the playground. $\overline{DE}$ is 20 yards from point *A* and 8 yards in length. $\overline{EF}$ is also 8 yards in length and is parallel to $\overline{AC}$. Plot and label points *D, E, F,* and *G* on the coordinate plane.

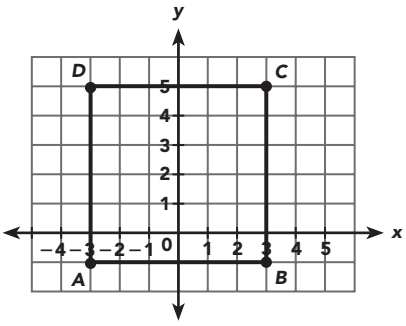
16. If $\overline{BC}$ is approximately 49 yards, what is the perimeter of the playground?

17. Tonya starts at point *E* and rides her scooter around the perimeter of the playground toward point *B*. If she travels at 5 yards per second, about how many seconds will it take her to get to point *D*?

Quadrant I: point *S*
Quadrant II: point *W*
Quadrant III: point *U*
Quadrant IV: point *Z*
Point *T* lies on the *y*-axis between Quadrant III and Quadrant IV.
Point *V* lies on the *x*-axis between Quadrant I and Quadrant IV.

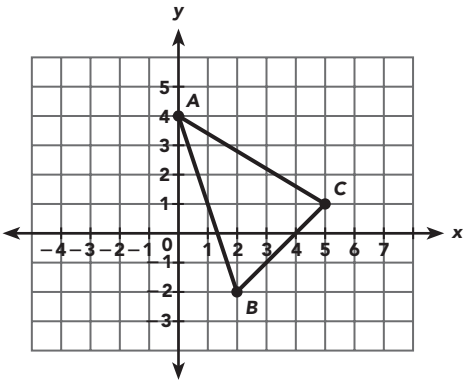
3. (−3, 9)
4. (7, 4)
5. (5, −6)
6. (−8, −2)
7. (3, −9)
8. (−7, −4)
9. (−5, 6)
10. (8, 2)
11. *y*-axis
12. *x*-axis

13.



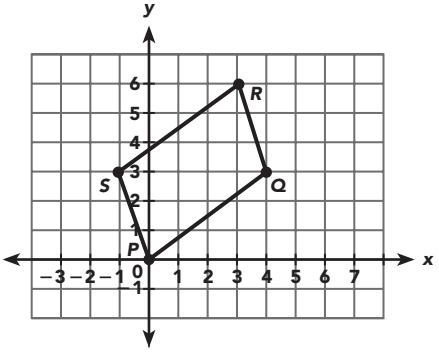
The figure formed is a square.

14.



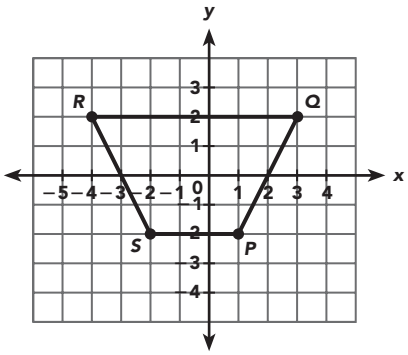
The figure formed is a triangle.

15.



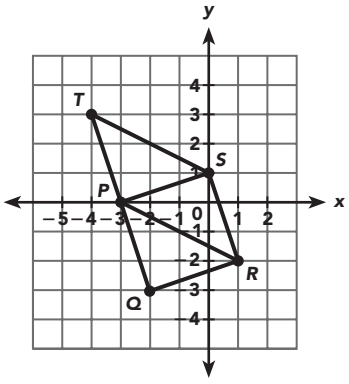
The figure formed is a parallelogram.

16.



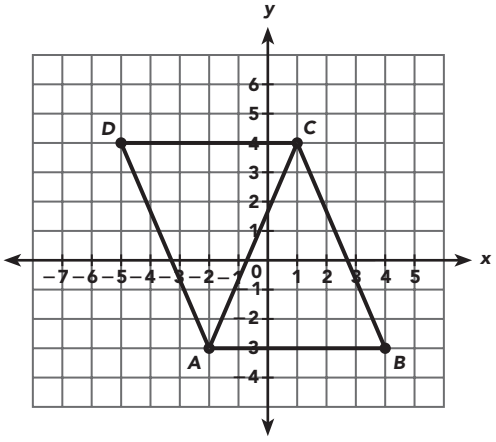
The figure formed is a trapezoid.

17. a)



b) *Q* (−2, −3)
c) *T* (−4, 3)

18. a)

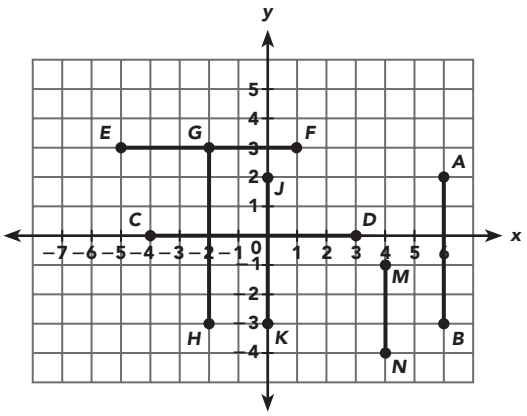


b) isosceles
c) *D* (−5, 4)

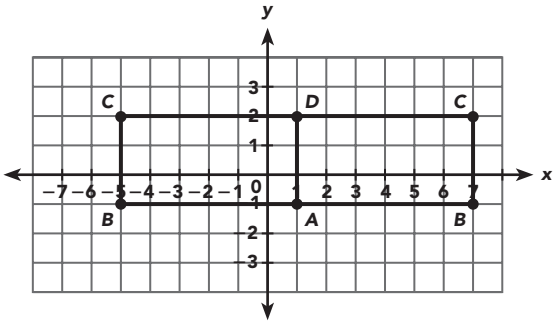
Lesson 9.2

1. *AB* = 5 units
2. *CD* = 7 units
3. *EF* = 6 units
4. *GH* = 6 units
5. *JK* = 5 units

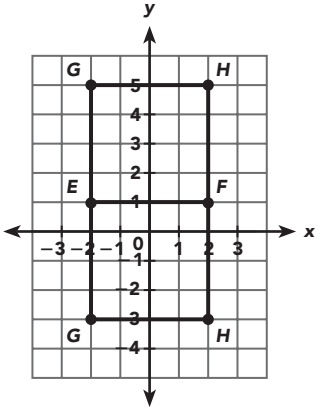
6. $MN = 3$ units



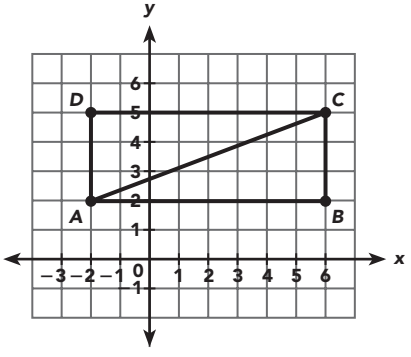
7. **a)** $B\ (7, -1)$, $C\ (7, 2)$
b) $B\ (-5\ -1)$, $C\ (-5, 2)$



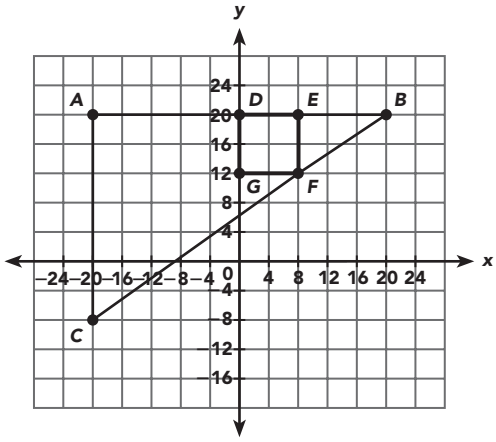
8. **a)** $G\ (-2, 5)$, $H\ (2, 5)$
b) $G\ (-2, -3)$, $H\ (2, -3)$



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



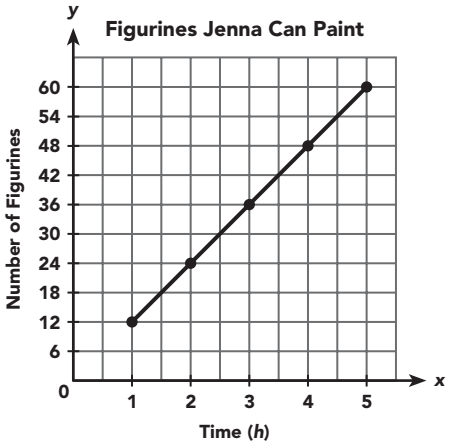
10. $P\ (-20, 10)$, $Q\ (5, 10)$, $R\ (5, -15)$, $S\ (25, -15)$, $T\ (25, -25)$, $U\ (-20, -25)$
11. 155 feet
12. $V\ (10, -15)$, $W\ (15, -15)$
13. 1,075 square feet
14. $A\ (-20, 20)$, $B\ (20, 20)$, $C\ (-20, -8)$
15. $D\ (0, 20)$, $E\ (8, 20)$, $F\ (8, 12)$, $G\ (0, 12)$



16. 40 + 49 + 28 = 117 yards
The perimeter of the playground is approximately 117 yards.
17. 117 − 12 = 105
105 ÷ 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.