

**Unit 1 Review Coordinate Geometry**

1. What is the midpoint between (-2, 5) and (4, 8)?

$$(1, 6.5)$$

2. What is the distance between the points (-6, 5) and (1, 1)?

$$\sqrt{65}$$

3. One endpoint of a segment is (20, 20). The midpoint of the segment is (-2, 4). What is the second endpoint of this segment?

$$(-24, -12)$$

4. What is the point that is 2:1 the distance from the endpoint (-3, 8) of the segment with endpoints (-3, 8) and (9, -7)?

$$(5, 18)$$

5. Luis works at a theater on 8th Avenue and 20th Street. Kaleb lives at the corner of 18th Avenue and 4th Street. What is the intersection that is midway between them?

$$(13, 12)$$

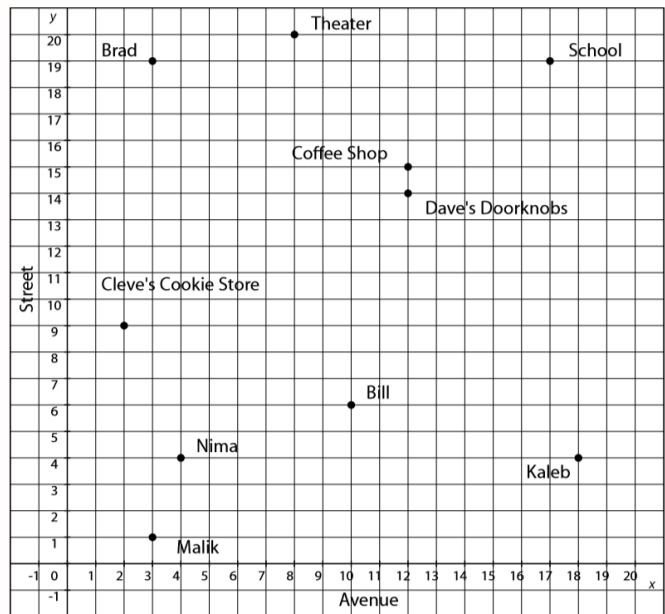
6. Cleve's Cookie Store is located at the corner of 2nd Avenue and 9th Street. Dave's Doorknobs is located at the corner of 12th Avenue and 14th Street. Located 1/5 of the distance from Cleve's Cookie Store is the post office. Where is the post office?

$$(4, 10)$$

8. Malik and Brad both live on 3rd Avenue. Malik lives at the corner of 1st Street, and Brad lives at the corner of 19th Street. 2/3 the distance from Malik's apartment to Brad's apartment is a market. Where is the market?

$$(3, 13)$$

Use the table to answer questions 5-8.



7. What is the distance between Bill and Kaleb?

$$\sqrt{68}$$

9. Determine which of the lines, if any, are parallel. Explain.

Line a passes through (-2,5) and (2,1)

Line b passes through (-4,3) and (3,4)

Line c passes through (-3,4) and (2,-6)

none

10. Determine which of the lines, if any, are perpendicular. Explain.

Line a passes through (-2,-4) and (-1,-1)

Line b passes through (-1,-4) and (1,2)

Line c passes through (2,3) and (4,2)

none

11. Determine which of the lines, if any, are parallel. Explain.

Line a:  $5y - x = 4$

Line b:  $5y = x + 7$

Line c:  $5y - 2x = 5$

a d b

12. Determine which of the lines, if any, are perpendicular. Explain.

Line a:  $5y - 2x = 1$

Line b:  $y = \frac{5}{2}x - 1$

Line c:  $y = \frac{2}{5}x + 3$

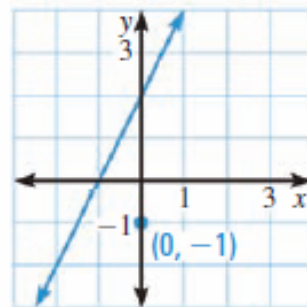
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13. Write an equation of the line that passes through the given point and is parallel to the given line.

$(1, -2); y = -2x + 1$

$y = -2x$

14. Write in slope-intercept form the equation of the line that is parallel to the line in the graph and passes through the given point.



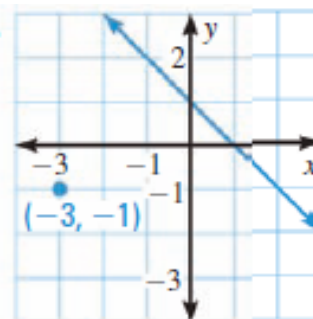
$y = 2x - 1$

15. Write an equation of the line that passes through the given point and is perpendicular to the given line.

$(-2, 2); y = \frac{2}{3}x + 2$

$y = -\frac{3}{2}x - 1$

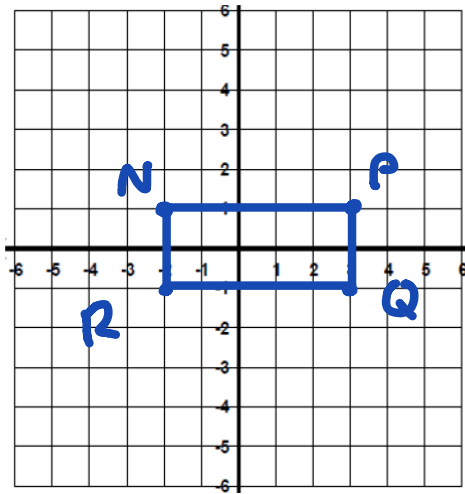
16. Write in slope-intercept form the equation of the line that is perpendicular to the line in the graph and passes through the given point.



$y = x + 2$

17. Find the area of the polygon with the given vertices.

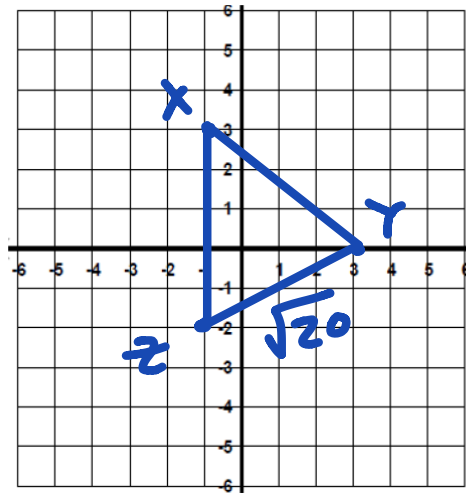
$N(-2, 1)$ ,  $P(3, 1)$ ,  $Q(3, -1)$ ,  $R(-2, -1)$



$$A = 10$$

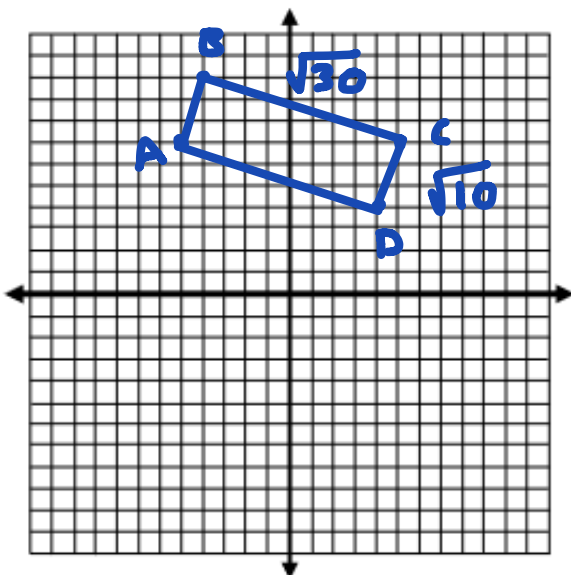
18. Find the perimeter of the polygon with the given vertices.

$X(-1, 3)$ ,  $Y(3, 0)$ ,  $Z(-1, -2)$



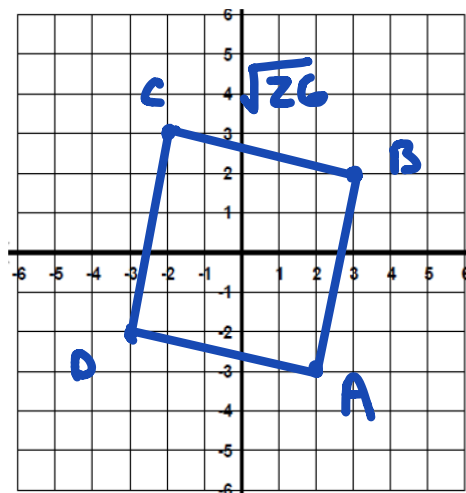
$$P = 14.5$$

19. What is the area of the rectangle ABCD with vertices:  $A(-5, 7)$ ,  $B(-4, 10)$ ,  $C(5, 7)$ , and  $D(4, 4)$ ?



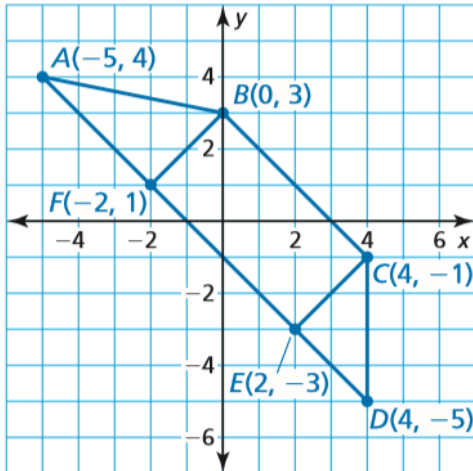
$$A = 30$$

20. Write an expression that represents the perimeter of the square with the given vertices:  $A(2, -3)$ ,  $B(3, 2)$ ,  $C(-2, 3)$ , and  $D(-3, -2)$



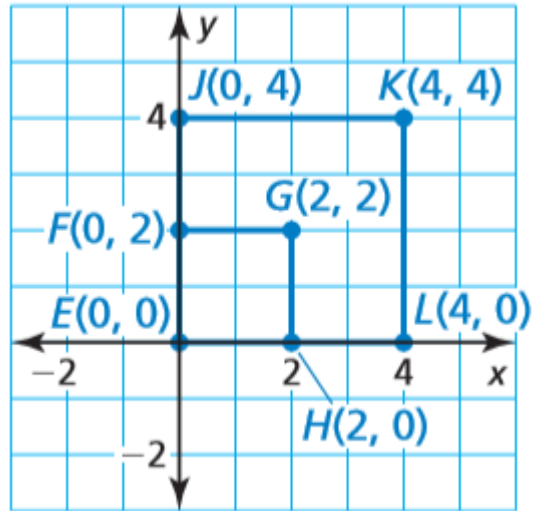
$$P = 4\sqrt{26}$$

21.



- a) Find the perimeter of  $\triangle CDE$ .
- b) Find the perimeter of rectangle BCEF.
- c) Find the perimeter of  $\triangle ABF$ .
- d) Find the perimeter of quadrilateral ABCD.
- e) Find the area of  $\triangle CDE$ .
- f) Find the area of rectangle BCEF.
- g) Find the area of  $\triangle ABF$ .
- h) Find the area of quadrilateral ABCD.

22.



- a. Find the areas of square EFGH and square EJKL. What happens to the area when the perimeter of square EFGH is doubled?
- b. Is this true for every square? Explain.