Pear Assessment

Geometry 2017-2024 GPE

Created By Sean

1 Create the equation of a circle that has a center at $(1, 3)$ and a radius of 4 units.

$(x-1)^2+(y-3)^2=4^2$

2 The equation of a circle is shown.

$x^2 + y^2 - 10x + 8y + 16 = 0$

What is the radius of the circle?

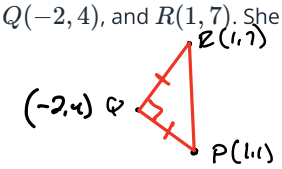
5

$x^2-10x+25 + y^2+8y+16 = -16+25+16$

$= 25$

$r=\sqrt{25}=5$

3 Janet draws triangle PQR with vertices $P(1, 1)$, $Q(-2, 4)$, and $R(1, 7)$. She claims that the triangle is an isosceles right triangle.



$QR^2 = 3^2+3^2 = 18$

$QR = \sqrt{18} = 3\sqrt{2}$

Which statement shows that Janet is correct?

(A) The slope of $\overline{PQ}$ is 1, which is the reciprocal of the slope of $\overline{QR}$, and PQ and QR are equal to $\sqrt{6}$. NO

(B) The slope of $\overline{PQ}$ is 1, which is the reciprocal of the slope of $\overline{QR}$, and PQ and QR are equal to $3\sqrt{2}$. NO

(C) The slope of $\overline{PQ}$ is -1, which is the negative reciprocal of the slope of $\overline{QR}$, and PQ and QR are equal to $\sqrt{6}$. YES

(D) The slope of $\overline{PQ}$ is -1, which is the negative reciprocal of the slope of $\overline{QR}$, and PQ and QR are equal to $3\sqrt{2}$. YES

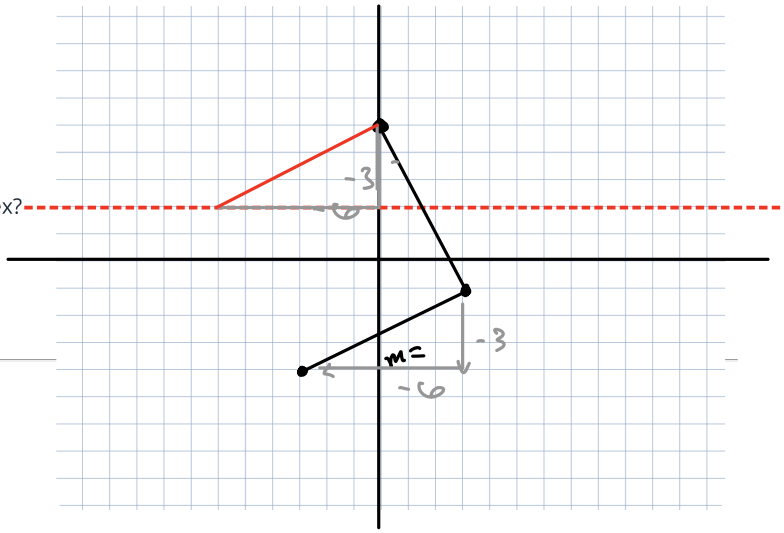
YES

4 The vertices of a rectangle are given as ordered pairs:

- $(0, 5)$
- $(3, -1)$
- $(-3, -4)$
- $(x, 2)$

What is the x-coordinate of the fourth vertex?

−6



5 What is the slope of a line that is perpendicular to the graph of $y = \frac{5}{4}x - \frac{3}{2}$?

(A) $-\frac{4}{5}$

(B) $-\frac{5}{4}$

(C) $\frac{4}{5}$

(D) $\frac{5}{4}$

$m = \frac{5}{4}$

$\perp m = -\frac{4}{5}$

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6 Triangle ABC, with the following characteristics, is placed on the coordinate plane.

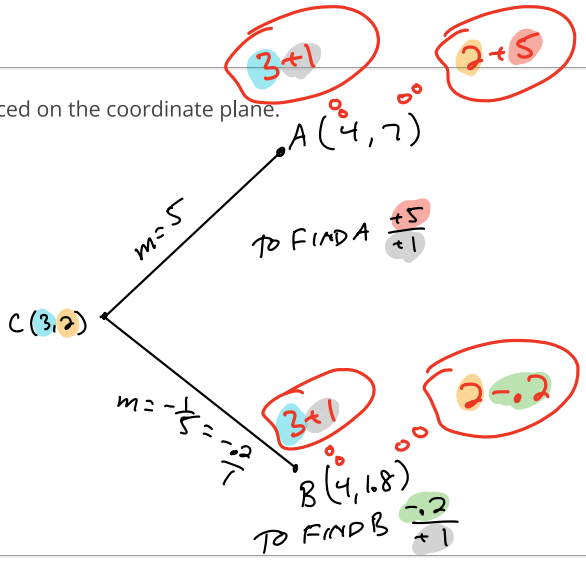
- $\overline{AB}$ is on a vertical line.
- $\angle C$ is a right angle.
- Point C is located at $(3, 2)$.
- The slope of $\overline{AC}$ is 5.

What are possible coordinates for points A and B?

A (4 , 7)

B (4 , 1.8)

Many correct answers



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7 Line k has a slope of -5. Line j is perpendicular to line k and passes through the point $(5, 9)$.

Create the equation for line j.

$\perp m = \frac{1}{5}$

$y - 9 = \frac{1}{5}(x - 5)$

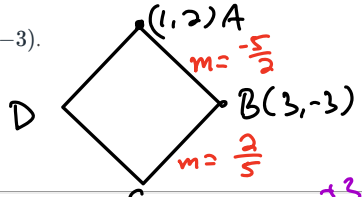
$y - 9 = \frac{1}{5}(x - 5)$

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8 Square $ABCD$ has vertices at $A\,(1,\ 2)$ and $B\,(3,\ -3)$.

What is the slope of $\overline{BC}$?

2/5

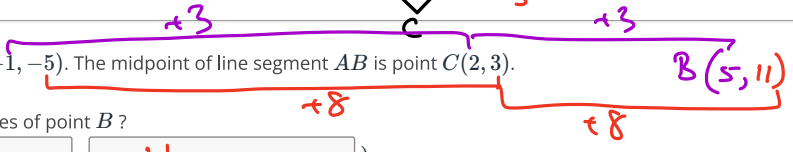


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9 Point A is located at $(-1, -5)$. The midpoint of line segment AB is point $C(2, 3)$.

What are the coordinates of point B?

(5 , 11)



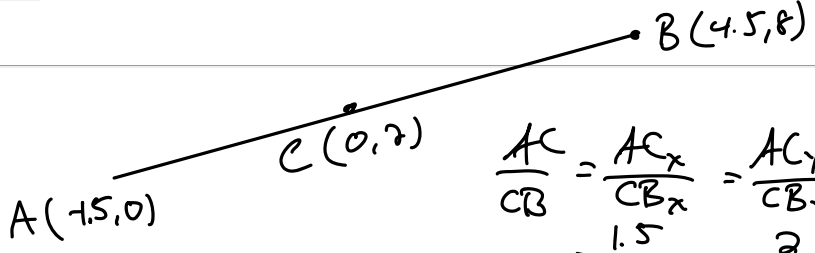
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10 Line segment AB has endpoints $A\,(-1.5,\ 0)$ and $B\,(4.5,\ 8)$. Point C is on line segment AB and is located at $(0,\ 2)$

What is the ratio of $\frac{AC}{CB}$?

2/6

A, B, C are colinear

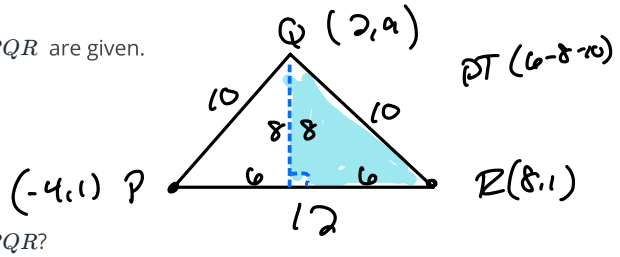


$\frac{AC}{CB} = \frac{AC_x}{CB_x} = \frac{AC_y}{CB_y}$

$= \frac{1.5}{4.5} = \frac{2}{6}$

11 The coordinates of the vertices of $\triangle PQR$ are given.

- $P(-4, 1)$
- $Q(2, 9)$
- $R(8, 1)$



What is the perimeter, in units, of $\triangle PQR$?

32 units

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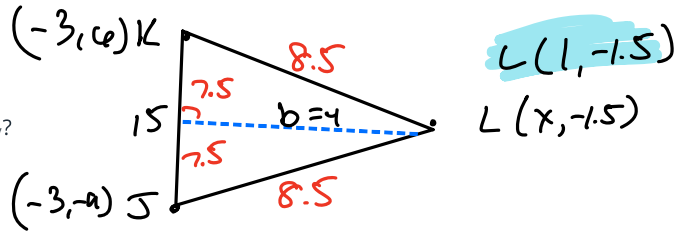
12 Isosceles triangle JKL has a perimeter of 32 units and the given vertices.

- $J(-3, -9)$
- $K(-3, 6)$
- $L(x, -1.5)$

L(-7,-1.5)

What is a possible x-coordinate for point L?

1
or -7



$b^2 + 7.5^2 = 8.5^2$

$b = \sqrt{8.5^2 - 7.5^2}$

$b = 4$