

Simplify the radical expression. (ABSOLUTELY NO DECIMALS)

1) $\sqrt{48}$ $\sqrt{2^3 \cdot 2^2 \cdot 3}$ $2 \cdot 2 \sqrt{3}$ <u>$4\sqrt{3}$</u>	2) $\sqrt{100}$ 10	3) $3\sqrt{180}$ $3 \cdot \sqrt{2^2 \cdot 3^2 \cdot 5}$ $3 \cdot 2 \cdot 3 \cdot \sqrt{5}$ <u>$18\sqrt{5}$</u>
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Find the slope, distance and midpoint. (Leave distance as a simplified radical)

Points	Slope	Distance	Midpoint
(8, 10) (2, 12)	4) $\frac{12-10}{2-8} = \frac{2}{-6} = -\frac{1}{3}$	5) $\sqrt{(-6)^2 + (2)^2}$ $\sqrt{40} = 2\sqrt{10}$	6) $(\frac{8+2}{2}, \frac{10+12}{2})$ $(5, 11)$
(2, 5) (2, 7)	7) $\frac{7-5}{2-2} = \frac{2}{0} = \text{UND}$	8) $\sqrt{(0)^2 + (2)^2}$ $\sqrt{4} = 2$	9) $(\frac{2+2}{2}, \frac{5+7}{2})$ $(2, 6)$

If the midpoint is (4,3) and the points given are (4,3) and (x, y). Find the endpoint (x, y).

10) WORK: $(\frac{x+x}{2}, \frac{y+y}{2})$ $(\frac{4+3}{4}, \frac{3}{2})$	13) Endpoint: $(5, -1)$
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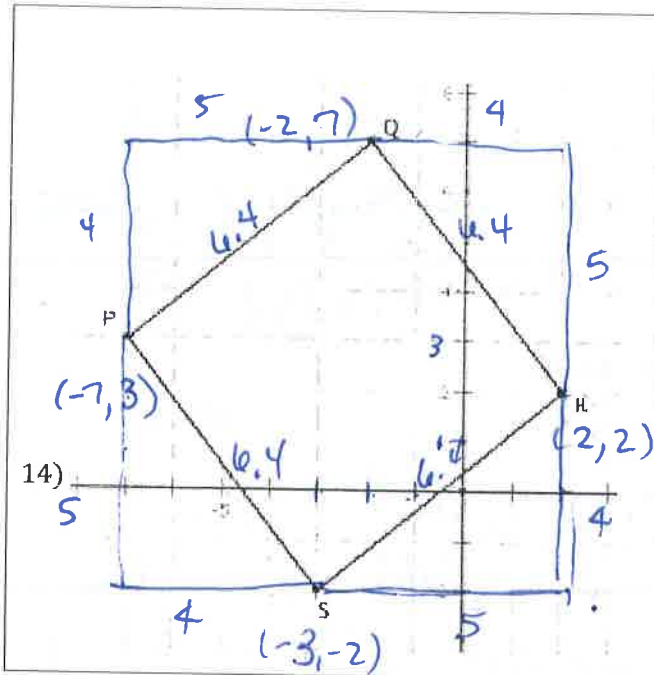
Find the slope of \overline{AB} and \overline{CD} and determine if the segments are parallel, perpendicular or neither.

11) A (-3, -1) B (-4, 2) C (5, 5) D (6, 2)	Slope of \overline{AB} <u>-3</u>
$\frac{2-(-1)}{-4-(-3)} = \frac{3}{-1} = -3$	Slope of \overline{CD} <u>-3</u>
$\frac{2-5}{6-5} = -\frac{3}{1}$	Segments are <u>Parallel</u>

Find the area and perimeter:

	<p>Work:</p> <p>12) AREA: $A = \frac{\text{Base} \cdot \text{Height}}{2} = \frac{(8)(10)}{2} = 40 \text{ units}^2$</p> <p>13) PERIMETER: $10 + 8 + 12.8 = 30.8 \text{ units}$</p>
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Prove the shape by finding distances and slopes of the following figures:



Side	Slope	Distance
QR	$-\frac{5}{4}$	$\sqrt{4^2 + (-5)^2}$ $\sqrt{41} = 6.4$
RS	$\frac{4}{5}$	$\sqrt{5^2 + 4^2}$ $\sqrt{41} = 6.4$
SP	$-\frac{5}{4}$	$\sqrt{14^2 + (-5)^2}$ $\sqrt{41} = 6.4$
PQ	$\frac{4}{5}$	$\sqrt{5^2 + 4^2}$ $\sqrt{41} = 6.4$

14) TYPE OF SHAPE: SQUARE
 JUSTIFY: Both pairs opp. side parallel due to same slope, all sides congruent due to same distance, adj sides perpendicular due to neg recip slope.

1. Joe needs to find the midpoint of a line segment on a coordinate plane. Given the coordinates of the endpoints, what is the *best* way for him to find the midpoint of the line segment?

- A. substitute the coordinates into the midpoint formula
- B. substitute the coordinates into the point-slope formula
- C. plot them on graph paper, draw the line, and count the squares to the middle
- D. plot them on graph paper, create a right triangle, and use the Pythagorean Theorem

2. A doctor reads coordinates off a computer screen for endpoints of a bone. The endpoints are at (-4, 2) and (6, 3). What is the length of the bone? Round your answer to the nearest tenth of a unit.

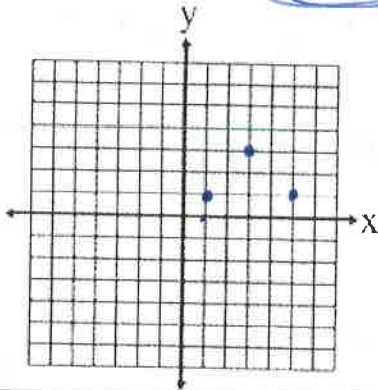
- A. 5.4 units
- B. 6.7 units
- C. 9.2 units
- D. 10.0 units

$$(-4, 2) (6, 3)$$

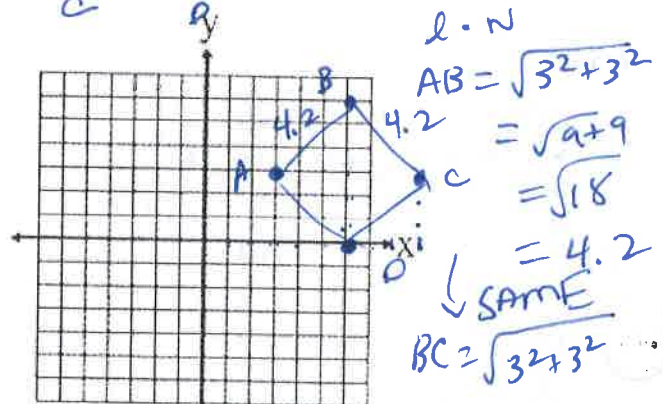
$$\sqrt{10^2 + 1^2} = \sqrt{101} = 10.05$$

5. An isosceles triangle has vertices at (1, 1) and (3, 3). Which of the following could be the coordinates of the third vertex?

- A. (2, 1)
- B. (3, 2)
- C. (4, 1)
- D. (5, 1)



7. What is the area of a square with vertices (3, 3), (6, 6), (9, 3) and (6, 0).



$$AB = \sqrt{3^2 + 3^2} = \sqrt{9+9} = \sqrt{18} = 4.2$$

SAME

$$BC = \sqrt{3^2 + 3^2}$$

$$(4.2)^2 = 17.64 \text{ unit}^2$$