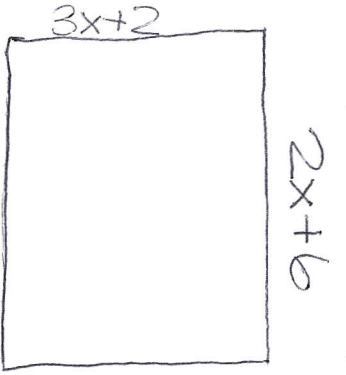


What is the length of a side of the square below?

- A 4
- B 14
- C 22
- D 35



Work

$$\frac{2x+6}{-2x} = \frac{3x+2}{-2x}$$

$$\frac{6}{-2} = \frac{x+2}{-2}$$

$$4 = x$$

$$\frac{2x+6}{2(4)+6} = \frac{3x+2}{3(4)+2}$$

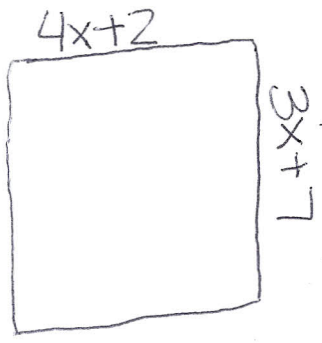
$$\frac{8+6}{14} = \frac{12+2}{14}$$

The answer is B. 14, both sides are equal.

Similar Question

What is the length of a side of the square below?

- A 6
- B 18
- C 22
- D 35



Property

In a square, all sides are all congruent.

In the figure below,

$\underline{AB} \parallel \underline{CD}$

Properties:

- Opposite angles are congruent.
- consecutive angles are supplementary.

### How to solve

$A + B + C + D = 360$   
 $x + 40 + x - 40 + x + 40 + x - 40$

$\text{E} \times 4$

$4x = 360$

ANSWER:  $x = 90$

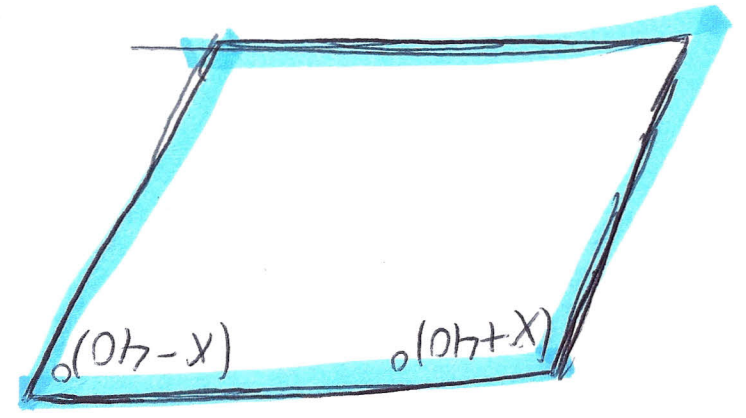
$A + D = 180$   
 $x + 40 + x - 40 = 180$   
 $2x = 180$

$\text{E} \times 2$

$\underline{90 = x}$

- A. 40
- B. 50
- C. 80
- D. 90

What is the value of  $x$ ?

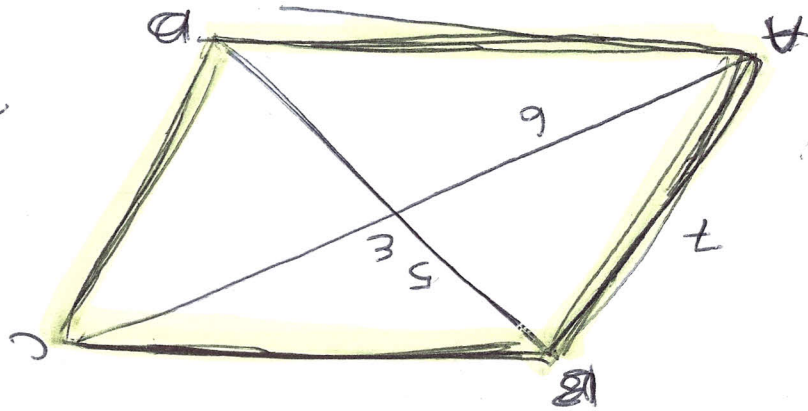


If ABCD is a parallelogram what is the length of segment BP?

- A. 10
- B. 11
- C. 12
- D. 14

Property:

- Diagonals bisect each other.



Example:

$$BE + ED = BD$$

$$5 + 3 = BD$$

$$BD = 10$$

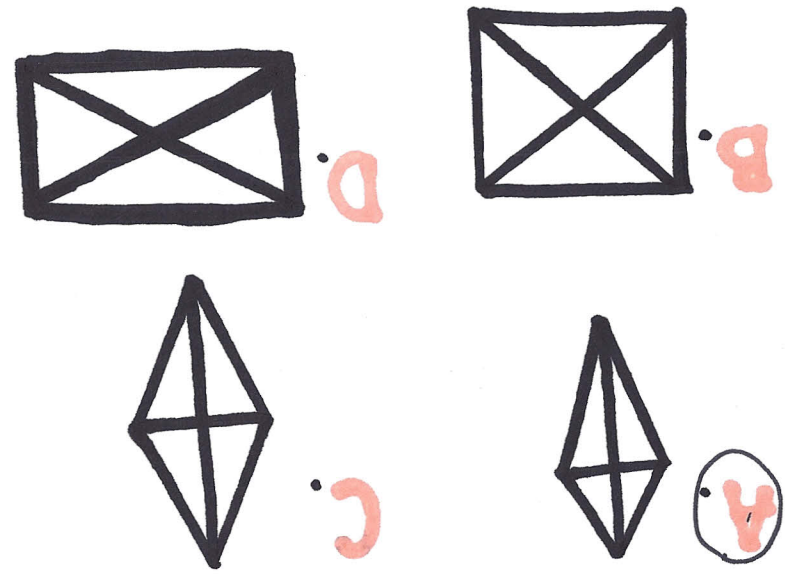
Group 3:

Problem #1:

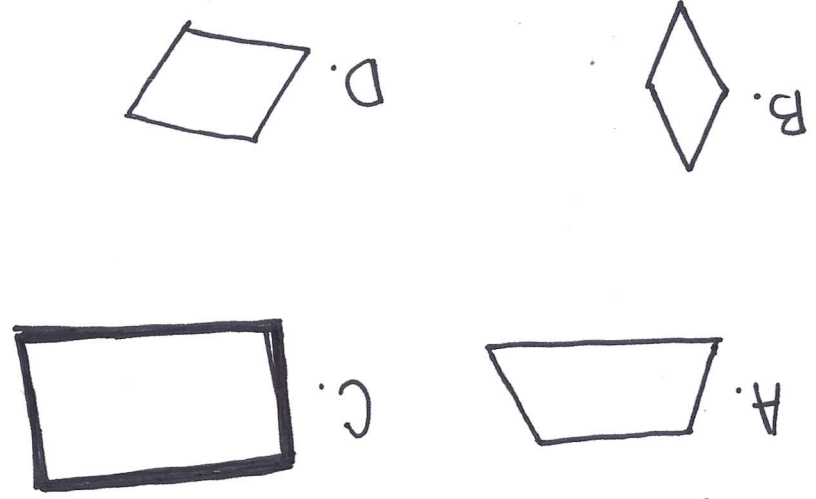
A conditional statement is shown below.

If a quadrilateral has perpendicular diagonals, then it's a rhombus.

Which of the following is a counter example to the statement above?



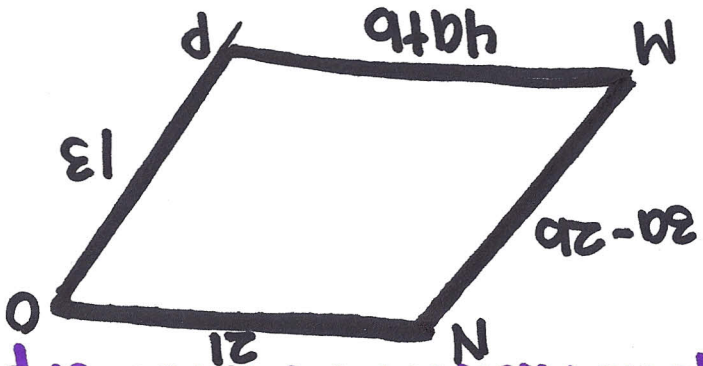
Example:  
If a quadrilateral has four right angles, then it is a square.



# Group 3:

## Problem #3

What values of  $a$  and  $b$  make quadrilateral  $MNOP$  a parallelogram?



D)  $a = \frac{7}{34}, b = \frac{7}{11}$

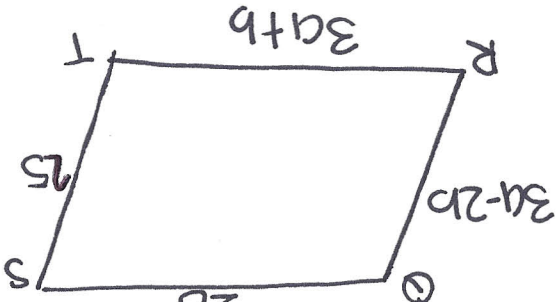
G)  $a = \frac{7}{11}, b = \frac{7}{34}$

B)  $a = 5, b = 1$

A)  $a = 1, b = 5$

•  $3a - 2b = 13$   
 $3(5) - 2(1) = 13$   
 $15 - 2 = 13$   
 $13 = 13$   
 •  $4a + b = 21$   
 $4(5) + 1 = 21$   
 $20 + 1 = 21$   
 $21 = 21$

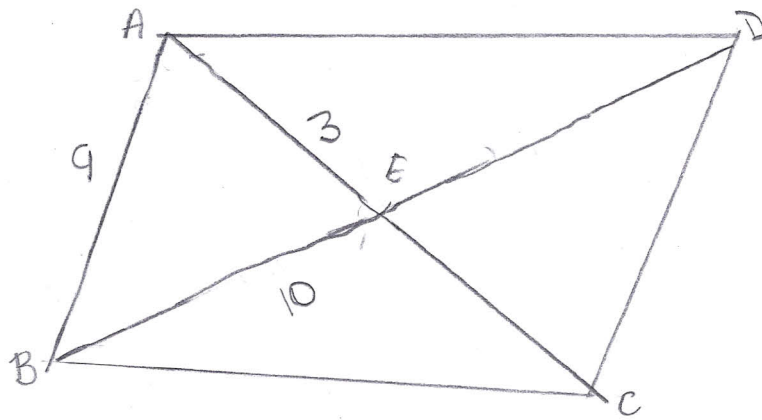
Property:  
 • opposite angles are congruent



Example:

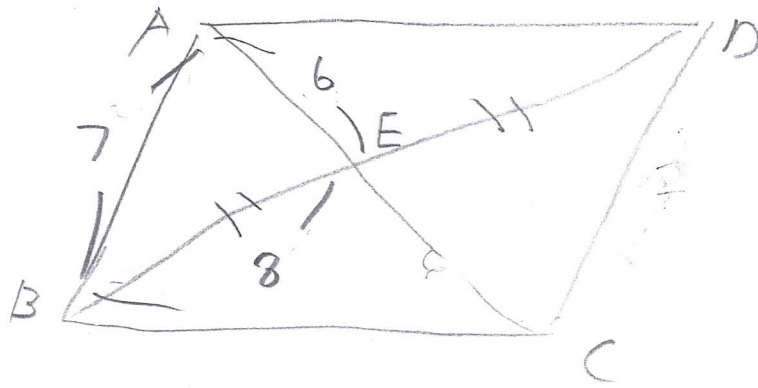
A.  $a = 6, b = 2$  C.  $a = 9, b = 1$

B.  $a = \frac{1}{4}, b = \frac{8}{3}$  D.  $a = 7, b = 4$



If  $ABCD$  is a Parallelogram  
what is the length of segment  $BD$ ?

- (A) 12
- (B) 9
- (C) 20
- (D) 18



If ABCD is a parallelogram,  
 what is the length of segment BD?

$$\overline{BE} + \overline{ED} = \overline{BD}$$

$$\underline{8 + 8 = 16}$$

- (A) 13
- (B) 12
- (C) 16
- (D) 14