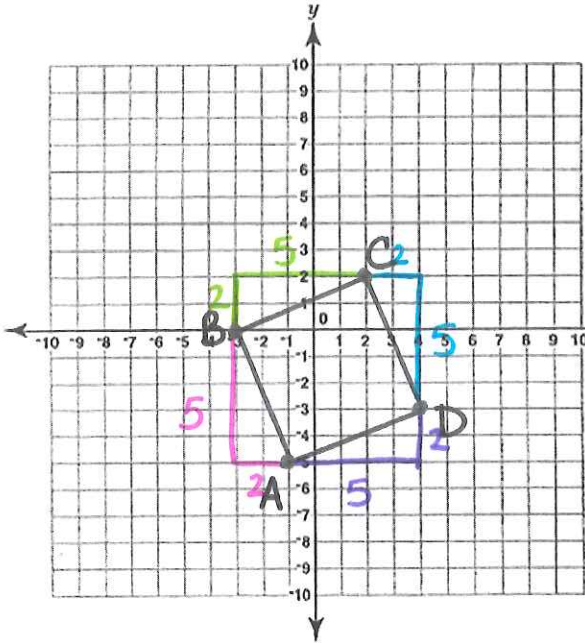


Coordinate Classification Practice

Determine whether the figure is a trapezoid, a parallelogram, a square, a rhombus or a general quadrilateral given the vertices. Show your work! Graph the figure to help you. If the graph is not large enough, extend it for you ☺

1. $A(-1, -5), B(-3, 0), C(2, 2), D(4, -3)$



Slopes:

$$AB = -\frac{5}{2}$$

$$BC = \frac{2}{5}$$

$$CD = -\frac{5}{2}$$

$$AD = \frac{2}{5}$$

$$AB \perp AD$$

Distances:

$$AB^2 = 2^2 + 5^2$$

$$AB^2 = 4 + 25$$

$$\sqrt{AB^2} = \sqrt{29} \text{ (it cannot be simplified)}$$

$$BC^2 = 2^2 + 5^2$$

$$BC = \sqrt{29}$$

$$CD^2 = 2^2 + 5^2$$

$$CD = \sqrt{29}$$

$$AD^2 = 2^2 + 5^2$$

$$AD = \sqrt{29}$$

Conclusion:

ABCD is a parallelogram because opposite sides are parallel

ABCD is a rhombus because all 4 sides are \cong

ABCD is a rectangle because all 4 angles are right angles

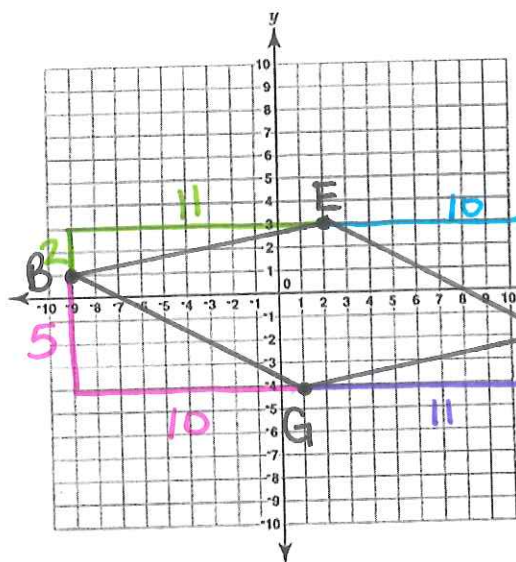
ABCD is a square because it has 4 \cong sides and 4 right angles

(is or is not)

Review: Find the perimeter.

$$P = \sqrt{29} + \sqrt{29} + \sqrt{29} + \sqrt{29} = \boxed{4\sqrt{29} \text{ units}}$$

2. $B(-9, 1), E(2, 3), F(12, -2), G(1, -4)$



Slopes:

$$BG = -\frac{5}{10} = -\frac{1}{2}$$

$$BE = \frac{2}{11}$$

$$EF = -\frac{5}{10} = -\frac{1}{2}$$

$$FG = \frac{2}{11}$$

Distances:

$$BG^2 = 5^2 + 10^2$$

$$BG^2 = 25 + 100$$

$$BG = \sqrt{125}$$

$$\boxed{BG = 5\sqrt{5}}$$

$$\sqrt{125}$$

$$\swarrow \searrow$$

$$\sqrt{25} \quad \sqrt{5}$$

$$\textcircled{5} \quad \textcircled{5}$$

$$BE^2 = 2^2 + 11^2$$

$$BE^2 = 4 + 121$$

$$BE = \sqrt{125}$$

$$\boxed{BE = 5\sqrt{5}}$$

$$EF^2 = 5^2 + 10^2$$

$$\boxed{EF = 5\sqrt{5}}$$

$$FG^2 = 2^2 + 11^2$$

$$\boxed{FG = 5\sqrt{5}}$$

Conclusion:

BEFG is a parallelogram because opposite sides are parallel

BEFG is a rhombus because all 4 sides are \cong

BEFG is not a rectangle because it does not have \perp sides (4 right angles)

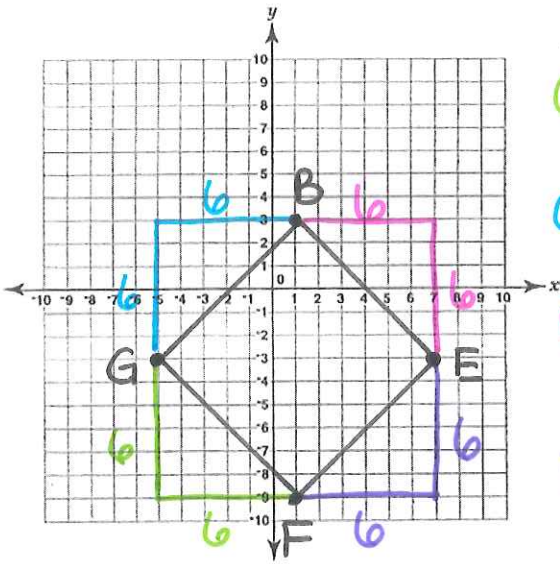
BEFG is not a square because it does not have \perp sides (4 right angles)

(is or is not)

Review: Find the perimeter.

$$P = 5\sqrt{5} + 5\sqrt{5} + 5\sqrt{5} + 5\sqrt{5} = \boxed{20\sqrt{5} \text{ units}}$$

3. $B(1, 3), E(7, -3), F(1, -9), G(-5, -3)$



Slopes:

$$GF = -\frac{6}{6} = -1$$

$$GB = \frac{6}{6} = 1$$

$$BE = -\frac{6}{6} = -1$$

$$FE = \frac{6}{6} = 1$$

Distances:

$$GF^2 = 6^2 + 6^2 = \sqrt{72}$$

$$GF^2 = 36 + 36$$

$$GF = \sqrt{72}$$

$$\boxed{GF = 6\sqrt{2}}$$

$$GB^2 = 6^2 + 6^2$$

$$\boxed{GB = 6\sqrt{2}}$$

$$BE^2 = 6^2 + 6^2$$

$$\boxed{BE = 6\sqrt{2}}$$

$$FE^2 = 6^2 + 6^2$$

$$\boxed{FE = 6\sqrt{2}}$$

Conclusion:

BEFG is a parallelogram because opposite sides are parallel

BEFG is a rhombus because all 4 sides are \cong

BEFG is a rectangle because all 4 angles are right angles

BEFG is a square because it has 4 \cong sides and 4 right angles

(is or is not)

Review: Find the perimeter.

$$P = 6\sqrt{2} + 6\sqrt{2} + 6\sqrt{2} + 6\sqrt{2} = \boxed{24\sqrt{2} \text{ units}}$$

Find the missing coordinate in the quadrilateral. Practice for MIDTERM! ☺

4. $ABCD$ is a rectangle with $B(-10, 7)$, $C(-10, 4)$, and $D(8, 4)$. Find the coordinates of A .

- A. $A(7, 10)$
- B. $A(8, 10)$
- C. $A(4, 7)$
- D. $A(8, 7)$
- E. $A(-10, 4)$

5. $ABCD$ is a rectangle with $B(-4, 0)$, $C(-4, 2)$, and $D(12, 0)$. Find the coordinates of A .

- A. $A(0, -4)$
- B. $A(0, 4)$
- C. $A(12, 2)$
- D. $A(2, 12)$
- E. $A(-2, 4)$

6. $ABCD$ is a rectangle with $B(2, 4)$, $C(-3, 3)$, and $D(2, 3)$. Find the coordinates of A .

- A. $A(3, 4)$
- B. $A(-3, 4)$
- C. $A(3, -3)$
- D. $A(2, 2)$
- E. $A(4, 3)$