Answers and talk notes

Represent Polygons on the Coordinate Plane

What your student is learning

Tonight we draw a polygon from its vertex coordinates, then use the coordinates to find side lengths, perimeter, and area.

Answers

Ask your student to explain before you look.

1. **A.** Horizontal. Horizontal: the y-values match, so the side runs straight across.
2. **B.** 6. Both x-values are positive, so subtract: 8 − 2 = 6.
3. **C.** 7. −4 and 3 are on opposite sides of 0, so add: 4 + 3 = 7.
4. **D.** 5. 3 and −2 are on opposite sides of 0, so add: 3 + 2 = 5.
5. **B.** 26 units. 9 + 4 + 9 + 4 = 26 units.

Talk about it

Which vertices share a coordinate? How long is the side between them?

Home mission

Pretend the middle of your table is (0, 0). Let one hand-width be 1 unit. Point to two spots in a straight row: one 3 units left, one 4 units right. How far apart are they? Then try two spots in a straight column.

When they are stuck, ask

- Which coordinate is the same for both points?
- How many units apart are the coordinates that change?
- Did you count carefully across zero?

Try not to say

- Just subtract the numbers and ignore the signs.
- It does not matter which number goes first.
- Perimeter and area are the same thing.