1. Reflect the point (3, 2) in the y-axis. The image is (a, 2). What is a?

   _____

2. a = (3, 1) and b = (2, −4). The top number of a + b is?

   _____

3. If a and b are the position vectors of A and B, then the vector AB is:

   ☐ b − a

   ☐ a + b

   ☐ a − b

   ☐ ½(a + b)

4. Translate (5, 3) by the vector (−2, 4). The image is (3, b). What is b?

   _____

5. a = (3, 1) and b = (2, −4). The bottom number of a + b is?

   _____

6. M is the midpoint of AB. The position vector OM is:

   ☐ ½(b − a)

   ☐ a + b

   ☐ b − a

   ☐ ½(a + b)

7. Which transformation changes the size of a shape?

   ☐ translation

   ☐ rotation

   ☐ reflection

   ☐ enlargement

8. Find the magnitude (length) of the vector (3, 4).

   _____

9. Two vectors are parallel if one is a scalar multiple of the other.

   ☐ True ☐ False

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☐ True ☐ False

1. **-3**

   Reflecting in the y-axis flips the sign of x: a = −3.

2. **5**

   3 + 2 = 5.

3. **b − a**

   AB = (position of B) − (position of A) = b − a.

4. **7**

   Move 4 up: 3 + 4 = 7.

5. **-3**

   1 + (−4) = −3.

6. **½(a + b)**

   OM = a + ½(b − a) = ½(a + b).

7. **enlargement**

   Only enlargement changes size; the other three keep it congruent.

8. **5**

   $\sqrt{(3^2 + 4^2)} = \sqrt{25} = 5$.

9. **True**

   Parallel vectors point the same (or opposite) way, so one is k times the other.

10. **False**

    Translation only changes position – the shape stays congruent (same size and shape).

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