THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

STAGE 5 · MATHEMATICS · PRACTICE PACK

Geometry position and direction

Year 5 of the national curriculum. Every question is worked through at the back, step by step, not just answered.

WHAT IS INSIDE

- Reflecting in a mirror line
- Translating a shape
- The shape has not changed
- How each one is worked

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3 sets · a hint on every question

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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Translating a shape

These get harder as you go down. Do them in order.



1. **A triangle has a corner at (1, 6). The whole triangle is translated 6 right and 2 up. Where is that corner now?**
   Every corner moves the same way, so move this one.

2. **A triangle has a corner at (3, 9). The whole triangle is translated 6 right and 6 up. Where is that corner now?**
   Every corner moves the same way, so move this one.

3. **A triangle has a corner at (1, 1). The whole triangle is translated 1 right and 2 up. Where is that corner now?**
   Every corner moves the same way, so move this one.

4. **A triangle has a corner at (6, 4). The whole triangle is translated 1 right and 5 up. Where is that corner now?**
   Every corner moves the same way, so move this one.

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Quick check

One right answer each. Ring the letter. These are for seeing what has stuck, so do them without working anything out on paper.



1. **A point sits at (8, 7). It is reflected in the vertical mirror line x = 9. Where does it land?**
   (A) (10, 7) (B) (7, 8) (C) (5, 6) (D) (10, 5)

2. **A triangle has a corner at (4, 7). The whole triangle is translated 6 right and 4 up. Where is that corner now?**
   (A) (14, 5) (B) (5, 6) (C) (10, 11) (D) (14, 8)

3. **A triangle has a corner at (5, 6). The whole triangle is translated 4 right and 1 up. Where is that corner now?**
   (A) (5, 6) (B) (7, 8) (C) (9, 7) (D) (10, 7)

4. **A point sits at (7, 3). It is reflected in the vertical mirror line x = 12. Where does it land?**
   (A) (9, 15) (B) (10, 11) (C) (17, 3) (D) (6, 4)

5. **A triangle has a corner at (4, 1). The whole triangle is translated 6 right and 4 up. Where is that corner now?**
   (A) (7, 8) (B) (10, 5) (C) (14, 8) (D) (2, 3)

6. **A triangle has a corner at (1, 1). The whole triangle is translated 1 right and 2 up. Where is that corner now?**
   (A) (10, 7) (B) (2, 3) (C) (14, 5) (D) (10, 5)

7. **A triangle has a corner at (3, 3). The whole triangle is translated 6 right and 4 up. Where is that corner now?**
   (A) (10, 9) (B) (9, 7) (C) (15, 7) (D) (5, 6)

8. **A triangle has a corner at (6, 4). The whole triangle is translated 1 right and 5 up. Where is that corner now?**
   (A) (10, 5) (B) (10, 11) (C) (7, 9) (D) (9, 15)

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How each one is worked, continued

TRANSLATING A SHAPE, CONTINUED



6. A triangle has a corner at (3, 3). The whole triangle is translated 6 right and 4 up. Where is that corner now?

1. Translating moves every point by the same amount.
2. 3 + 6 = 9 and 3 + 4 = 7.
3. The corner is now at (9, 7).

Answer: **(9, 7)**

7. A triangle has a corner at (4, 1). The whole triangle is translated 6 right and 4 up. Where is that corner now?

1. Translating moves every point by the same amount.
2. 4 + 6 = 10 and 1 + 4 = 5.
3. The corner is now at (10, 5).

Answer: **(10, 5)**

8. A triangle has a corner at (5, 6). The whole triangle is translated 4 right and 1 up. Where is that corner now?

1. Translating moves every point by the same amount.
2. 5 + 4 = 9 and 6 + 1 = 7.
3. The corner is now at (9, 7).

Answer: **(9, 7)**

THE SHAPE HAS NOT CHANGED

1. After a shape is reflected, what happens to the lengths of its sides?

1. A reflection and a translation both move a shape without changing its size or its angles.
2. A translation slides it, and a reflection flips it over, so only a reflection changes which way round it faces.
3. So the lengths of its sides: they stay the same.

Answer: **they stay the same**

2. After a shape is reflected, what happens to the size of its angles?

1. A reflection and a translation both move a shape without changing its size or its angles.
2. A translation slides it, and a reflection flips it over, so only a reflection changes which way round it faces.
3. So the size of its angles: they stay the same.

Answer: **they stay the same**

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.