Teacher Notes

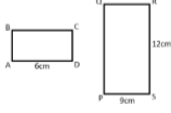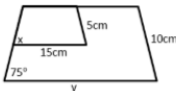| **Stage 10, Unit 1: Investigating properties of shapes**	**Check in**

The following boarding card is intended to check that your students have a secure grasp of the knowledge required for this unit, with the intention of it being used diagnostically rather than as a summative test:

- Understand and work with similar shapes
- Solve linear equations, including those with the unknown in the denominator of a fraction
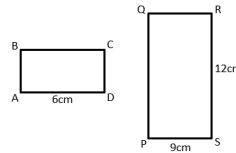- Understand and use Pythagoras' theorem

ANSWERS:

1.   4.5cm
2.   i) The sides are in the same ratio
   ii) The angles are the same in both triangles
3. $x = 75$
   $y = 30$cm
4. $x = 29$
5. $y = 7.5$
6. $b = 1/2$
7.   The square of the hypotenuse is equal to the sum of the squares of the other two sides
8.   26cm
9.   6.9cm (to 1dp)
10. i) No   The sides do not satisfy Pythagoras' Theorem $a^2 + b^2 \neq c^2$
   ii) Yes The sides do satisfy Pythagoras' Theorem $a^2 + b^2 = c^2$
   iii) Yes The sides do satisfy Pythagoras' Theorem $a^2 + b^2 = c^2$
   iv) Yes The sides do satisfy Pythagoras' Theorem $a^2 + b^2 = c^2$

Destination: **Investigating properties of shapes**

Stage 10 Unit 1 take-off

Name: _____

Things to remember:

1. The rectangles ABCD and PQRS are similar. Find AB

2. Triangles ABC and PQR are similar. State two facts about triangles ABC and PQR.

3. The two trapezia are similar. Calculate the missing angle, x and the missing length, y

4. Solve $5x = 145$ 5. Solve $\frac{2y}{3} = 5$ 6. Solve $\frac{10}{4b} = 5$

7. State Pythagoras' Theorem

8. In triangle ABC, AB = 10cm, BC = 24cm and angle ABC = 90°. Find AC.

9. In triangle PQR, PQ = 8cm, QR = 4cm and angle PRQ = 90°. Find PR.

4. Are the following triangles right-angled? Explain your answer

   i) 6, 7, 8   ii) 50, 120, 130
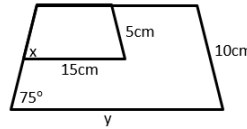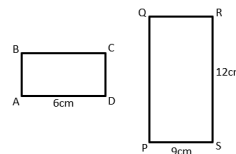
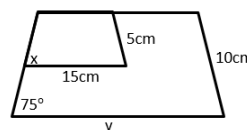   iii) 15, 20, 25   iv) 0.6, 0.8, 1

Destination: **Investigating properties of shapes**

1. The rectangles ABCD and PQRS are similar. Find AB

2. Triangles ABC and PQR are similar. State two facts about triangles ABC and PQR.

3. The two trapezia are similar. Calculate the missing angle, x and the missing length, y

4. Solve 5x = 145   5. Solve $\frac{2y}{3} = 5$ 6. Solve $\frac{10}{4b} = 5$

7. State Pythagoras' Theorem

8. In triangle ABC, AB = 10cm, BC = 24cm and angle ABC = 90°. Find AC.

9. In triangle PQR, PQ = 8cm, QR = 4cm and angle PRQ = 90°. Find PR.

4. Are the following triangles right-angled? Explain your answer

   i) 6, 7, 8   ii) 50, 120, 130

   iii) 15, 20, 25   iv) 0.6, 0.8, 1