UNIT 3 Pythagoras' Theorem Mental Tests

M 3.1 Standard Route *(no calculator)*

Calculate:

1. (a) 5^2 (25)

   (b) 10^2 (100)

   (c) $\sqrt{36}$ (6)

   (d) $\sqrt{9}$ (3)

   (e) $3^2 + 4^2$ (25)

   (f) $10^2 + 5^2$ (125)

   (g) $6^2 - 4^2$ (20)

   (h) $10^2 - 6^2$ (64)

   (i) $4^2 + 6^2$ (52)

   (j) $9^2 - 5^2$ (56)

M 3.2 Academic Route *(no calculator)*

Calculate:

1. (a) 8^2 (64)

   (b) 6^2 (36)

   (c) $\sqrt{81}$ (9)

   (d) $\sqrt{49}$ (7)

   (e) $9^2 + 6^2$ (117)

   (f) $8^2 - 4^2$ (48)

   (g) $5^2 + 7^2$ (74)

   (h) $8^2 - 7^2$ (15)

2. A right-angled triangle has two shorter sides of lengths 3 cm and 4 cm.
   How long is the hypotenuse? (5 cm)

3. A right-angled triangle has a hypotenuse of length 10 cm and one other side of length 8 cm.
   How long is the third side? (6 cm)

UNIT 3 Pythagoras' Theorem Mental Tests

M 3.3 Express Route *(no calculator)*

Calculate:

1. (a) $8^2 + 4^2$ (80)

   (b) $10^2 - 7^2$ (51)

   (c) $\sqrt{10^2 - 6^2}$ (8)

   (d) 11^2 (121)

   (e) $\sqrt{13^2 - 12^2}$ (5)

   (f) $\sqrt{225}$ (15)

   (g) $12^2 - 9^2$ (63)

   (h) $\sqrt{5^2 - 3^2}$ (4)

2. A right-angled triangle has two shorter sides of lengths 6 cm and 8 cm.
   How long is the hypotenuse? (10 cm)

3. A right-angled triangle has a hypotenuse of length 13 cm. One of the other sides has length 12 cm. How long is the third side? (5 cm)