KS3 – Pythagoras & Trigonometry – Answers

Section A – Basic Pythagoras

Q1
a) $a^2 + b^2 = c^2$, where c is the hypotenuse.
b) The side opposite the right angle.
c) Add.
d) Subtract.

Q2
a) 5 cm
b) 13 cm
c) 17 cm
d) 25 cm

Q3
a) 5 cm
b) 8 cm
c) 15 cm
d) 20 cm

Q4
a) 10.8 cm
b) 11.5 cm
c) 13.0 m

Q5
a) 15 m
b) 10 m
c) 20 cm

Q6
a) Yes: $6^2 + 8^2 = 36 + 64 = 100 = 10^2$.
b) No: $5^2 + 6^2 = 61$, but $8^2 = 64$.
c) Yes: $7^2 + 24^2 = 49 + 576 = 625 = 25^2$.

Q7

$\sqrt{(18^2 + 24^2)} = \sqrt{900} = 30$ m.

Section B – SOHCAHTOA (Higher KS3)

Q8
a) opposite / hypotenuse
b) adjacent / hypotenuse
c) opposite / adjacent
d) Hypotenuse

Q9
a) Sine
b) Cosine
c) Tangent

Q10
a) x = 5.7 cm
b) x = 10.4 cm
c) x = 7.0 cm

Q11
a) x = 14.9 cm
b) x = 17.5 cm
c) x = 6.7 cm

Q12
a) θ = 36.9°
b) θ = 22.6°
c) θ = 53.1°

Q13
a) 6.3 m
b) 14.0°

Q14
a) 9.4 m
b) 4.8 m

Q15
a) 10.0 m
b) 9.2°

Q16
a) 10.8 cm
b) 14.4 cm