Year 9 Mathematics

Assessment 4 2005 Term 3

Section A
(Pythagoras)

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D

Multiple Choice: /13
Extended Answer: /31
Total: /44

Section B (Indices)

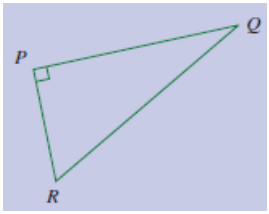
1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D

Multiple Choice: /13
Extended Answer: /24
Total: /37

Section A (Pythagoras)

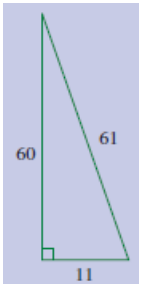
Multiple Choice [1 mark each]

1. Which side is the hypotenuse



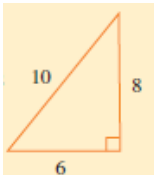
A) PR B) PQ C) QR D) P

2. How long is the hypotenuse



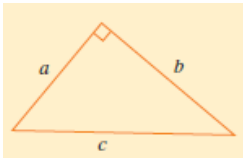
A) 11 B) 60 C) 61 D) 71

3. Which is a correct version of Pythagoras' equation



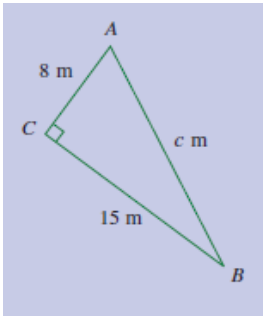
A) $10^2 = 8^2 + 6^2$ B) $8^2 = 10^2 + 6^2$ C) $6^2 = 8^2 + 10^2$ D) $10 = 8 + 6$

4. Which is a correct version of Pythagoras' equation



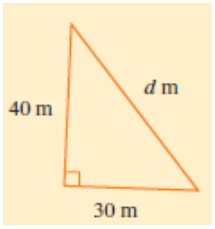
A) $a^2 = b^2 + c^2$ B) $b^2 = c^2 + a^2$ C) $c^2 = a^2 + b^2$ D) $c = a + b$

5. How long is the hypotenuse



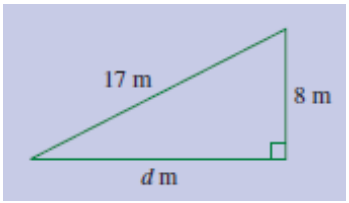
A) 17 m B) 289 m C) 15 m D) 23 m

6. What is the value of d



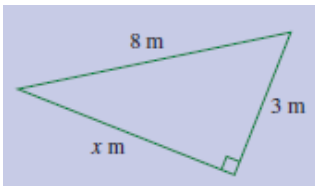
A) 80 m B) 50 m C) 2500 m D) 10 m

7. What is the value of d



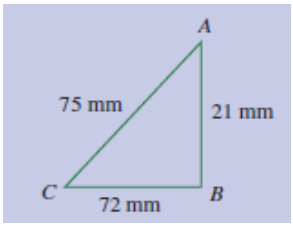
A) 15 m B) 23 m C) 225 m D) 16.5 m

8. What is the value of x (1 decimal place)



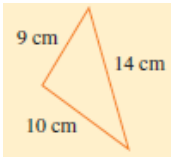
A) 7.4 m B) 2304 m C) 6.3 m D) 24.0 m

9. Is the following triangle a right-angled triangle?



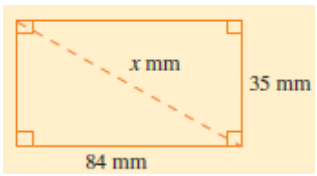
A) Yes B) No

10. Is the following triangle a right-angled triangle?



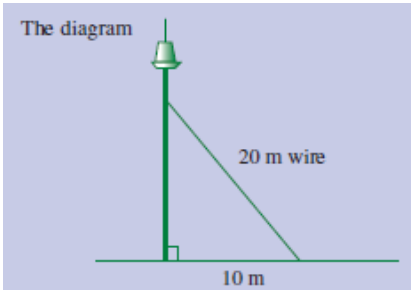
A) Yes B) No

11. What is the value of x



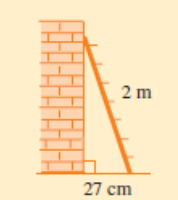
A) 119 mm B) 82 cm C) 91 mm D) 89 mm

12. How far up the tower does the wire reach (1 decimal place)



A) 17.3 m B) 19.1 m C) 30.3 m D) 200.1 m

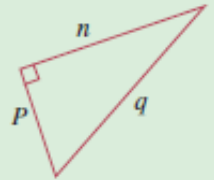
13. How far does the ladder reach up the wall (closest centimetre)



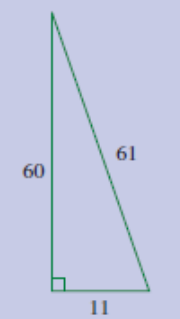
A) 198 cm B) 25 cm C) 2 m D) 187 cm

Extended Answer

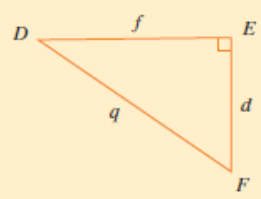
14. Write Pythagoras' equation for the following triangle [2]



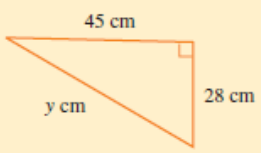
15. Write Pythagoras' equation for the following triangle [2]



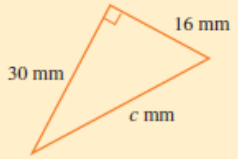
16. Write **three** labels for the hypotenuse [3]



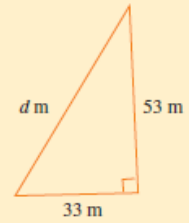
17. Calculate the value of y (1 decimal place) [2]



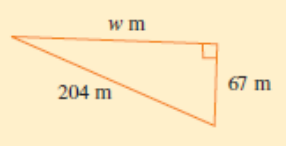
18. Calculate the value of c (1 decimal place) [2]



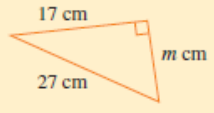
19. Calculate the value of d (1 decimal place) [2]



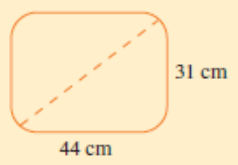
20. Calculate the value of w (1 decimal place) [2]



21. Calculate the value of m (1 decimal place) [2]



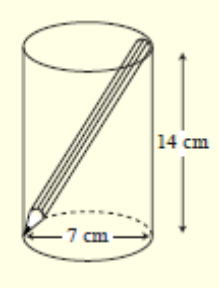
22. How long is the diagonal of the following TV set (1 decimal place) [3]



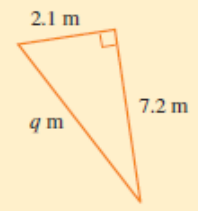
23. Complete the following sentence: [2]

Pythagoras' theorem only works for a _____ triangle, and the hypotenuse is the _____ side of that triangle.

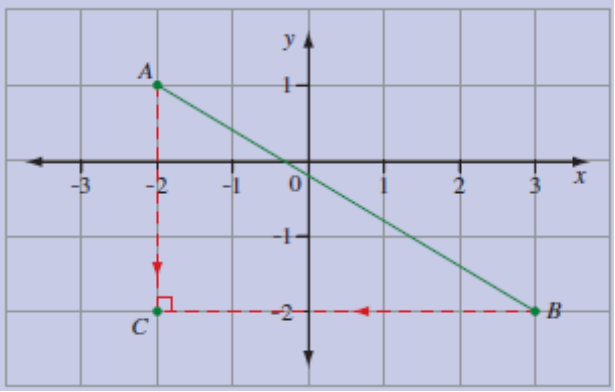
24. Calculate how long the pencil is (1 decimal place) [3]



25. Calculate the perimeter of the following triangle (1 decimal place) [3]



26. Find the length of AB (1 decimal place) [3]



Section B (Indices)

Multiple Choice [1 mark each]

1. What is the name of the seven (7) in this: 7^9

   A) Base B) Power C) Hypotenuse D) Indice

27. What is a name of the nine (9) in this: 7^9

   A) Base B) Log C) Exponent D) Top

28. 4^3 is the equivalent to

   A) 4 x 4 x 4 B) 3 x 3 x 3 C) 12 D) 3 x 3 x 3 x 3

29. 2^3 is the equal to

   A) 23 B) 8 C) 6 D) 2

30. $\sqrt{9}$ is the equal to

   A) 9 B) 3 C) 81 D) 4.5

31. $\sqrt[4]{20}$ is the equivalent to

   A) $20^{\frac{1}{4}}$ B) $4^{\frac{1}{20}}$ C) 20^4 D) 5

32. $4^3 \times 4^7$ is the equivalent to

   A) 4^4 B) 4^{21} C) 4^{10} D) 8^{10}

33. 8×8^4 is the equivalent to

   A) 8^5 B) 8^4 C) 64^4 D) 8^0

34. $7^{12} \div 7^{10}$ is the equivalent to

   A) 7^2 B) 7^{22} C) 7^4 D) 12^7

35. $\frac{9^6}{9^3}$ is the equivalent to

   A) 9^9 B) 9^3 C) 1^3 D) 9^2

36. $\left(5^4\right)^3$ is the equivalent to

A) 5^7 B) 5^1 C) 5^{12} D) 20^3

37. 3×10^4 is the equivalent to

A) 340 B) 3000 C) 3100 D) 30000

38. 8^0 is the equivalent to

A) 1 B) 8 C) 80 D) 14

Extended Answer

39. Write $\sqrt{876}$ to 1 decimal place [2]

40. Write $\sqrt[3]{25}$ as a fractional index [2]

41. Simplify the following:

a. $12^8 \div 12^8$ [1]

b. $5^3 \times 5^{-2}$ [1]

c. $\frac{6^3}{6}$ [1]

d. $\left(2^2\right)^2$ [1]

42. Write $\sqrt[5]{62}$ as a fractional index [2]

43. Simplify this: $\frac{\left(6^2\right)^3}{6^4}$ [3]

44. Circle the larger value:

a. 1×10^4 OR 1×10^6 [1]

b. 2.3×10^2 OR 2.6×10^2 [1]

c. 1×10^{-3} OR 3×10^{-3} [1]

d. 12×10^{-5} OR 12×10^{-8} [1]

45. Write 2.3×10^5 as a decimal number [2]

46. Write 2.3×10^{-5} as a decimal number [2]

47. Simplify the following, keep your answers in scientific notation:

a. $(3 \times 10^7) \times (2 \times 10^3)$ [1]

b. $(6 \times 10^8) \div (3 \times 10^4)$ [1]

c. $(5 \times 10^4)^3$ [1]