

1. Convert the number 0.000000057 into standard form.

*Answer* ..... [2]

2. Calculate the value of  $5x^2 - 3x^3$  when  $x = (-2)$ .

*Answer* ..... [2]

3. The temperature at midnight in Munich was  $-9^{\circ}\text{C}$ . At 2 A.M the temperature was  $-16^{\circ}\text{C}$ .

a) Does the change in temperature make it colder or warmer?

*Answer* ..... [1]

b) By how many degrees has the temperature changed?

*Answer* .....  $^{\circ}\text{C}$  [1]

4. A maths teacher can make up 15 algebra questions in an hour.

How many hours will she take to make up 105 questions?

*Answer* ..... hours [2]

5. Write out the prime factors of 660.

*Answer* ..... [2]

6.  $P = \frac{Q}{7} + 15$

a) If  $Q=84$ , calculate the value of  $P$ .

*Answer*  $P = \dots\dots\dots$  [1]

b) If  $P=19$ , calculate the value of  $Q$ .

*Answer*  $Q = \dots\dots\dots$  [1]

c) Make  $Q$  the subject of the equation.

*Answer*  $Q = \dots\dots\dots$  [2]

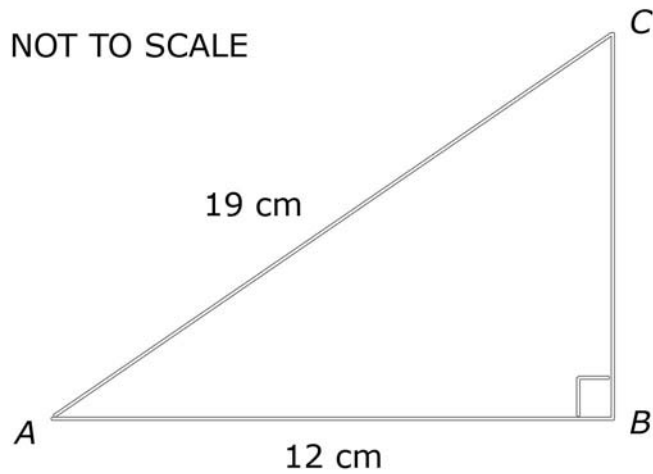
7. If  $2^n = 64$ , find the value of  $n$ .

*Answer*  $\dots\dots\dots$  [2]

8. Work out  $5 + 4 \times 6 \div 2$

*Answer*  $\dots\dots\dots$  [1]

9. The triangle,  $ABC$ , below is right-angled.



- a) Calculate the length of side  $BC$ , giving your answer correct to 1 decimal place.

*Answer* ..... cm [2]

- b) Calculate the angle  $CAB$ , giving your answer correct to the nearest degree.

*Answer* ..... ° [2]

10. Last year a maths teacher's wages were \$2000 per month. This year the same maths teacher's wages were \$2300 per month. Calculate the percentage increase.

*Answer* ..... % [2]

11. Dean and Pearl share their annual profits of \$40000 in the ratio 3:5.

How much does each receive?

*Answer: Dean receives \$.....*

*Pearl receives \$..... [2]*

12. Nine children in a class do a survey and write down the number of brothers and sister they have. Their results are as follows:

0, 3, 1, 4, 1, 2, 1, 0, 2

a) Write down the mode number of brothers and sisters.

*Answer ..... [1]*

b) Evaluate the median number of brothers and sisters.

*Answer ..... [2]*

c) Calculate the mean number of brothers and sisters.

*Answer ..... [2]*

**Answers**

1.  $5.7 \times 10^{-8}$
2. 44
3. a) colder                      b)  $7\text{ C}^\circ$ .
4. 7
5.  $2^2 \times 3 \times 5 \times 11$
6. a) 27                              b) 28  
c)  $Q = 7(P - 15)$  or  $Q = 7P - 105$
7.  $n = 6$
8. 17
9. a) 14.7                      b)  $51^\circ$
10. 15%
11. Dean \$15000 and Pearl \$25000
12. a) 1                              b) 1                              c) 1.56