1. Solve the equation $4x + 18 = 6$.

Answer $x =$ ..... [1]

2. Work out $\sqrt{48} \times \sqrt{20}$, giving your answer to the nearest integer.

Answer ..... [2]

3. $x = y^3 - \sqrt{y}$

Calculate the value of x if $y = 4$.

Answer $x =$ ..... [2]

4. The height below sea level of Jericho is 55m. Jerusalem is 1340 m above sea level.

Find the difference in the heights of Jericho and Jerusalem.

Answer ..... m [1]

5. The scale on a map is stated as 1:1 000 000.

Write this as 1cm = n km.

Answer $n =$ .....km [1]

6. 27 42 2 25 10

Give an example from the list of number above of,

a) a square number,

Answer ..... [1]

b) a cube number,

Answer ..... [1]

c) a triangular number,

Answer ..... [1]

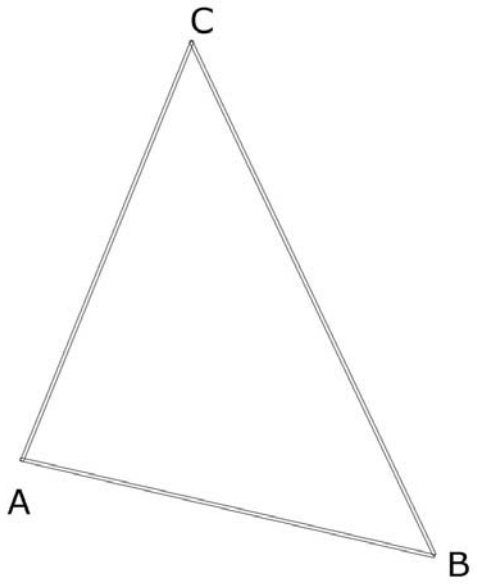
d) a number divisible by 6,

Answer ..... [1]

e) a prime number.

Answer ..... [1]

7. Using the shape below construct the locus of the set of points that are equidistant from the lines *AB* and *AC*. [3]



8. Sam starts a bike race at 09 39 and finishes at 10 15.

How many minutes was this?

Answer .....minutes [1]

9. a) Solve the equation $4(3x - 1) - 4x = 36$.

Answer $x =$ ..... [2]

b) Factorise $6x^2 - 24x$.

Answer ..... [1]

10. The population of China is known to be 1300 million.

a) Write 1300 million in standard form.

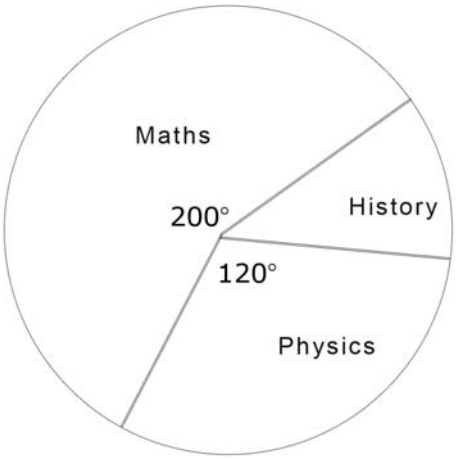
Answer ..... [1]

b) On average each person in China consumes 200000 grains of rice a month.

Find in standard form the number of grains of rice consumed in a month in China.

Answer ..... [2]

11. Below is a pie chart that shows the favourite subject of 72 IB students.



Not to scale

a) Calculate the angle for History in the pie chart.

Answer .....° [2]

b) Calculate how many students voted mathematics as their favourite subject.

Answer ..... [2]

c) What percentage is this of the total?

Answer .....% [2]

12. One letter is chosen from the word *PROBABILITY*.

a) What is the probability that it is the letter *B*?

Answer ..... [1]

b) What is the probability that it is not the letter *A*?

Answer ..... [1]

Answers

1. -3

2. 31

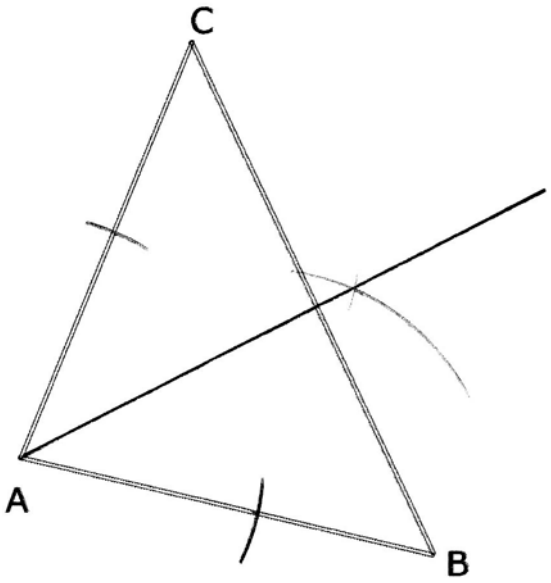
3. 62

4. 1395

5. 10

6. a) 25 b) 27 c) 10 d) 42 e) 2

7.



8. 36

9. a) 5 b) $6x(x-4)$

10. a) 1.3×10^{9} b) 2.6×10^{14}

11. a) 40 b) 40 c) 55.6

12. a) $\frac{2}{11}$ b) $\frac{10}{11}$