



LORD
WANDSWORTH
COLLEGE

· HAMPSHIRE ·

Academic Scholarship 13+

Mathematics Sample Paper

Marks: 35

13+ Scholarship

Complete questions 1-6

Choose 2 questions from questions 7 - 10

1 a) Show that

$$\frac{15}{4} \times \frac{6}{5} = 4\frac{1}{2}$$

You must show all your steps in your working.

..... (2)

b) Yesterday it took 5 cleaners $\frac{9}{2}$ hours to clean all the rooms in a hotel.
There are only 3 cleaners to clean all the rooms in the hotel today.
Each cleaner is paid £8.20 for each hour or part of an hour they work.
How much will each cleaner be paid today?

£ (3)

- 2** a) Ali has 1 litre of squash. He always mixes 0.05 litres of squash with 200ml of water to make a glass of drink.

Find the total volume of the drink that Ali can make.

Give your answer in litres.

..... litres (2)

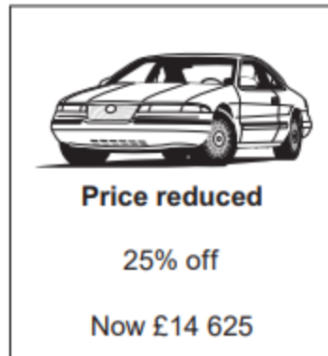
- b) A lorry is travelling at 13.6 m/s.

The speed limit is 50 km/h.

Is the lorry breaking the speed limit? (You must show your working)

..... (3)

3 a)



Work out the price of the car before it was reduced.

..... (2)

b) A classic car appreciates by 8.5% per annum. If the car is worth £23,998 in January 2022:

i) What is its value in January 2025?

..... (3)

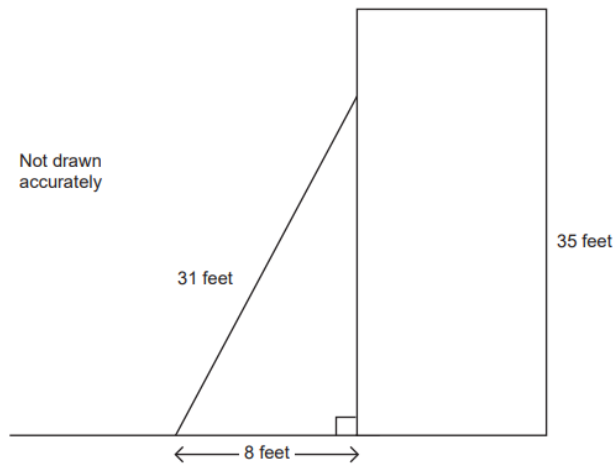
4 James thinks of two numbers. He says

“The Highest Common Factor (HCF) of my two numbers is 3 The Lowest Common Multiple (LCM) of my two numbers is 45”

Write down two numbers that James could be thinking of.

..... (3)

5. A ladder of length 31 feet is leaning against a wall as shown. The foot of the ladder is 8 feet from the wall. The wall is 35 feet tall.



Work out the distance from the top of the ladder to the top of the wall.
Give your answer to 3 significant figures.

..... (4)

6 . Alec has 6 one-centimetre cubes.

Alec rearranges the 6 cubes to make a cuboid with the **smallest** possible surface area.

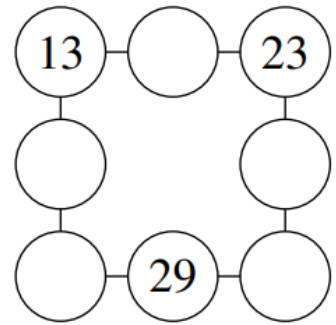
Find the total surface area of this cuboid.

..... cm² (3)

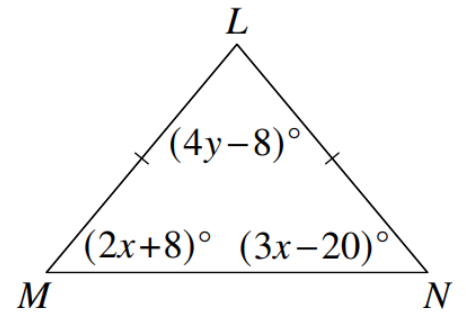
Section 2 – Choose 2 out of the 4 to complete [5 marks each]

- 7** When this prime number square is completed, the eight circles contain eight different primes, and each of the four sides has total 43.

What is the sum of the five missing primes?

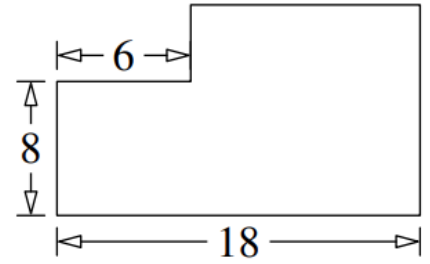


8. Triangle LMN is isosceles with $LM = LN$. What is the value of y ?



9. In the diagram, all distances shown are in cm. The perimeter of the shape is 60 cm.

What is the area, in cm^2 , of the shape?



10. Eleanor's Elephant Emporium has four types of elephant. There are twice as many grey elephants as pigmy elephants, three times as many white elephants as grey elephants and four times as many pink elephants as white elephants.

There are 20 more white elephants than pigmy elephants. How many elephants are in Eleanor's Emporium?

You must show full workings

End of Test

(Total 35 marks)