

1

A college has
a total of 105 teachers
19 more female teachers than male teachers.

What proportion of the teachers are female?

[3 marks]

Answer _____

2

Saj makes Rose Pink paint and Cherry Pink paint.

He mixes red paint with white paint as shown.

Rose Pink

red : white = 1 : 2

Cherry Pink

red : white = 4 : 3

He makes 60 litres of Rose Pink paint.

To this Rose Pink paint he adds

80 litres of red paint and 28 litres of white paint.

Has he now made Cherry Pink paint?

You **must** show your working.

[4 marks]

3 (a) Tom is tiling a wall.

He needs to buy at least 100 tiles.

The tiles are sold in large packs and small packs.

Large pack	40 tiles	£18
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Small pack	28 tiles	£14
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Special offer

25% reduction when you buy 3 or more **large** packs

Work out the cheapest cost for Tom to buy the packs of tiles he needs.

[3 marks]

Answer £ _____

3 (b) Tom is also tiling a floor.

The floor is a rectangle with length 600 cm and width 240 cm

Each tile is a square with side 40 cm

Tom uses this method to work out the number of tiles he needs.

$$\begin{aligned}\text{Number of tiles that will fit along the length} &= 600 \div 40 \\ &= 15\end{aligned}$$

$$\begin{aligned}\text{Number of tiles that will fit along the width} &= 240 \div 40 \\ &= 6\end{aligned}$$

$$\begin{aligned}\text{Total number of tiles needed} &= 15 + 6 \\ &= 21\end{aligned}$$

Give a reason why Tom's method is wrong.

[1 mark]

4

Working alone, it takes Kevin 4 hours to paint an area of 12 m^2

Kevin and Steve are going to paint an area of 24 m^2

Kevin says,

“Working together at the same rate it will take us 8 hours, because 24 is 2×12 ”

Is he correct?

Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

[1 mark]

5

6 cakes cost £10.74

Work out the cost of 11 of these cakes.

[2 marks]

Answer £

6

	Cost of 100 grams
Cereal	49p
Pasta	14p

Leah buys 400 grams of cereal and 250 grams of pasta.

Work out the **total** cost in £

[4 marks]

Answer £ _____

7 A machine to clean carpets can be hired.

Machine hire £25 per day	Cleaning fluid 1-litre bottle £10 2-litre bottle £18
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Rana wants to
hire the machine for 1 day
and
buy 5 litres of cleaning fluid.

Work out the **smallest** total amount she could pay. [3 marks]

Answer £ _____

8 Steve and Molly each buy 480 tea bags.

Small packs 80 tea bags for £1.90	Large packs 160 tea bags for £3.25
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Steve buys only small packs.
Molly buys only large packs.

In total, how much **more** than Molly does Steve pay? **[4 marks]**

Answer £ _____

9

Sam types a constant number of words per minute.

He takes 8 minutes to type a report of 416 words.

How long does it take him to type an essay of 1534 words?

Give your answer in minutes and seconds.

[3 marks]

Answer _____ minutes _____ seconds

- 10 (a)** A shop sells bottles of orange juice.
Each bottle costs 75p

Work out the greatest number of bottles that can be bought with £5

[2 marks]

Answer _____

- 10 (b)** Two shops sell bottles of apple juice.

Shop X pack of 4 bottles Was £2.50 Now 10% off	Shop Z pack of 12 bottles £7
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At which shop is it cheaper to buy 24 bottles?

Show working to support your answer.

[4 marks]

Answer _____

Answer _____ g

- 12** A shop sells notebooks and pencils.

Notebooks
Pack of 8 for £12

Pencils
56p each
or
Pack of 6 for £2.70

- 12 (a)** Marek buys some **packs** of notebooks.
The cost is £60

In total, how many **notebooks** does he buy?

[2 marks]

Answer _____

- 12 (b)** Work out the cheapest cost of 10 pencils.

[3 marks]

Answer £ _____

- 12 (c)** The shop also sells folders for £3.20 each.
The shop has this offer.



Work out the cost of 4 folders using the offer.

[3 marks]

Answer £ _____

13 Bag A and bag B each contain only red discs and green discs.

Bag A	Contains 28 red discs There are twice as many red discs as green discs
Bag B	Contains 20 green discs There are 3 red discs for every 5 green discs

13 (a) Work out the **total** number of discs.

[3 marks]

Answer _____

14 (a) Jamil rides a motorbike.

The motorbike uses one litre of petrol for every 14 miles.

How many litres of petrol does the motorbike use to go 168 kilometres?

Use 8 kilometres = 5 miles

[3 marks]

Answer _____ litres

15 Two bags, X and Y, each contain coloured discs.

In bag X, $\frac{7}{20}$ of the discs are red.

In bag Y, $\frac{2}{5}$ of the discs are red.

Which bag has the **greater** proportion of red discs, X or Y?

You **must** show your working.

[2 marks]

Answer _____

- 16** There are 56 cubes in a box.
The cubes are green, red, blue or white.
17 cubes are green.
There are an **equal** number of red, blue and white cubes.

- 16 (a)** How many red cubes are in the box?

[2 marks]

Answer

17

Rick claims most of the flats in his 8-floor building are energy efficient.

He samples 45 flats from floors 1 to 5

Give a reason why this sample may **not** be useful in testing Rick's claim.

[1 mark]
