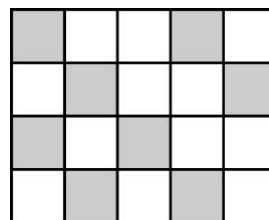


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- 1 a What fraction of this rectangle is shaded?
b What percentage of the rectangle is not shaded?
c Draw a similar rectangle, 5 squares long and 4 squares wide.
Shade 65% of the new rectangle.



- 2 On 1 June the number of visitors to a theme park was recorded as 19476.
a Write the number 19476 in words.
b What is the value of the digit 4 in this number?
c Write the number 19476 to the nearest thousand.
d The next day there were two-and-a-half thousand more visitors than on 1 June. How many visitors went to the theme park on 2 June?
e Write the number of visitors on 2 June to the nearest 10.

- 3 From the numbers in the rectangle, write down all of the:

- a square numbers
b cube numbers
c prime numbers
d factors of 56
e multiples of 6.

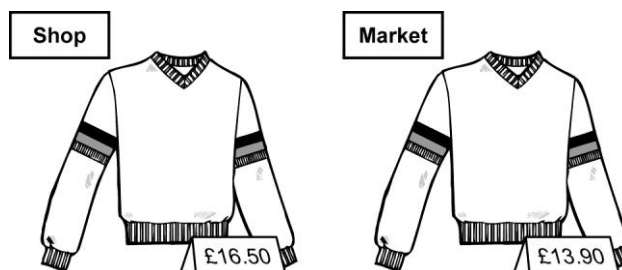
25	17	28	7	8
	36	27	19	42
14	30	64	1	3

- 4 List these fractions in order of size, starting with the smallest.

$$\frac{2}{3}, \frac{4}{9}, \frac{5}{6}, \frac{1}{2}$$

Show your method.

- 5 A factory worker packed 67 boxes of drawing pins in an hour.
Each box contained 48 drawing pins.
a Explain how you would estimate the number of drawing pins that she packed.
b Would you expect the actual number to be more or less than your estimate?
Explain your answer.
c Calculate the exact number of drawing pins that she packed into the boxes.
Show your method.
- 6 Jack saw two identical sweatshirts for sale, one in a shop and one in a market.



The sweatshirt in the shop was on sale at $\frac{2}{3}$ of the marked price.

The sweatshirt in the market was on sale with 20% off the marked price.

Work out which sweatshirt would cost less to buy.

Show all your working.

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7 Work these out:

a 5^3 **b** $\sqrt[3]{8000}$ **c** $\sqrt{4^3 + 6^2}$ **d** $\sqrt[3]{-8}$

8 Copy and complete the following table showing equivalent fractions, decimals and percentages.

Fraction	Decimal	Percentage
	0.3	
		65%
$\frac{5}{8}$		
		$33\frac{1}{3}\%$
	0.84	
$\frac{4}{25}$		

9 a Simplify these ratios: **i** 15:25 **ii** $\frac{1}{2} : \frac{3}{4}$ **iii** 2.4:1.6 **iv** 30 cm:1.5 m

b The audience in a theatre is made up of the following ratio:

men: women: children = 2:4:3

There are 207 people in the audience. Calculate the number of men.

c Copy and complete these equivalent ratios:

i 3:7 = 21:..... **ii** 18:30 =:5 **iii** $2\frac{1}{2}:5\frac{3}{4} = 10:.....$

10 a Rhian measures the height of one of her tomato plants as 20 cm.

The next week it is 15% taller. What is its new height?

b Another tomato plant grows from 240 cm to 312 cm.

Calculate the percentage change in height.

11 Look at these number cards:

0.5 10 0.1 0.05 1 2

Copy and complete the blank cards below and work out the answers to parts **a** and **b**.

a Choose the two cards that give the lowest possible answer.

\times =

b Choose two of the cards that give the answer 100.

\div = 100

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12 Use the rules of indices to simplify the following.

Give your answers in index form.

a $4^3 \times 4^5$

b $3^8 \div 3^2$

c $(t^4)^3$

d $\frac{m^9}{m^2 \times m^4}$

13 Sharon is making fairy cakes. She uses 150 g flour to make 24 cakes.

The following week she wants to make 60 fairy cakes.

How much flour will she need?