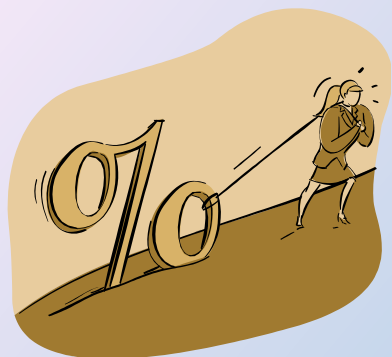
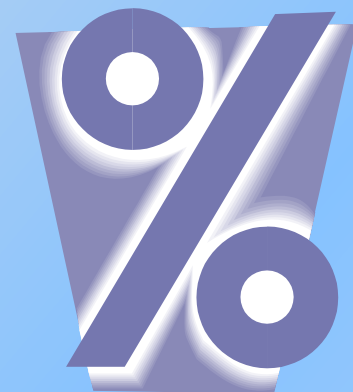
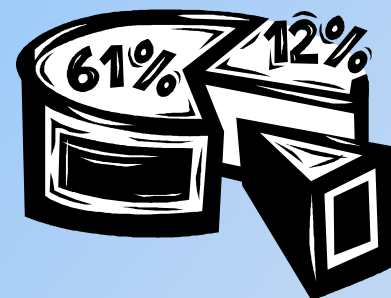




Perfect Percentages

L.O. Find percentages of numbers or quantities including word problems.



Percentages %

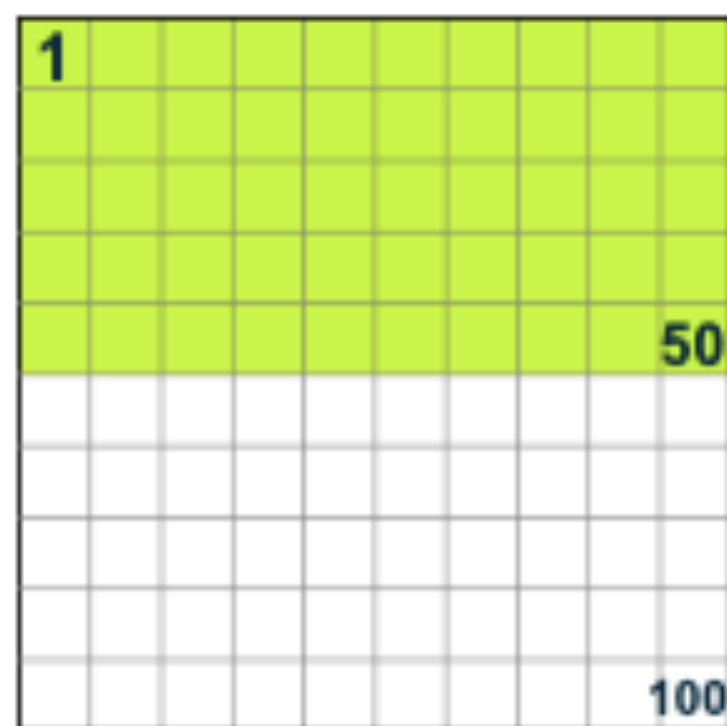


When we say "Percent" we are really saying "per 100"

One percent (**1%**) means 1 per 100.

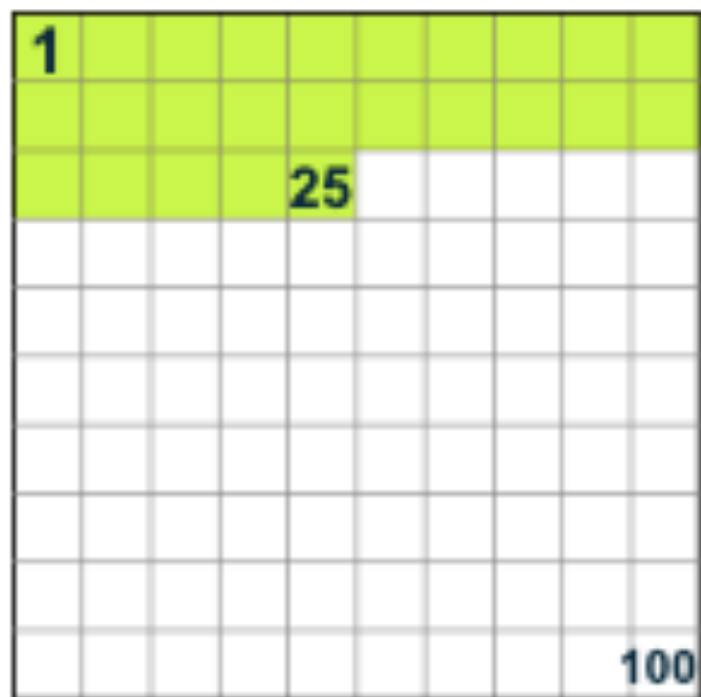


1% of this line is shaded green: it is very small isn't it?

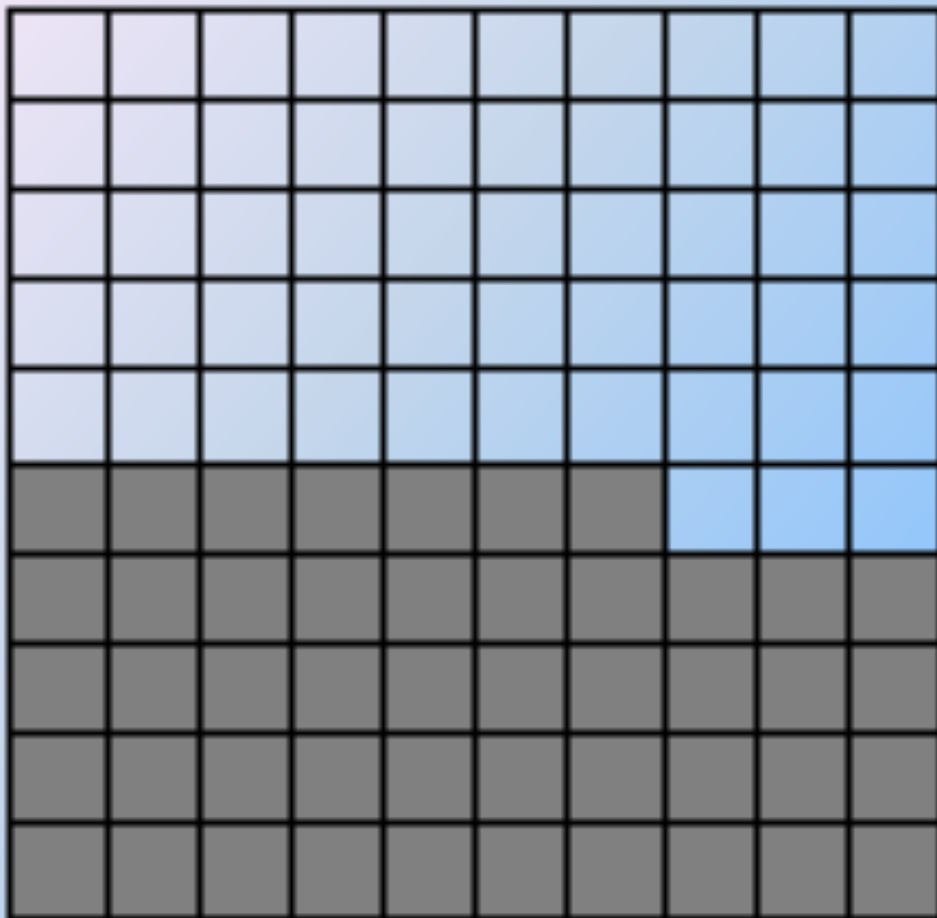


50% means 50 per 100
(50% of this box is green)

25% means 25 per 100
(25% of this box is green)



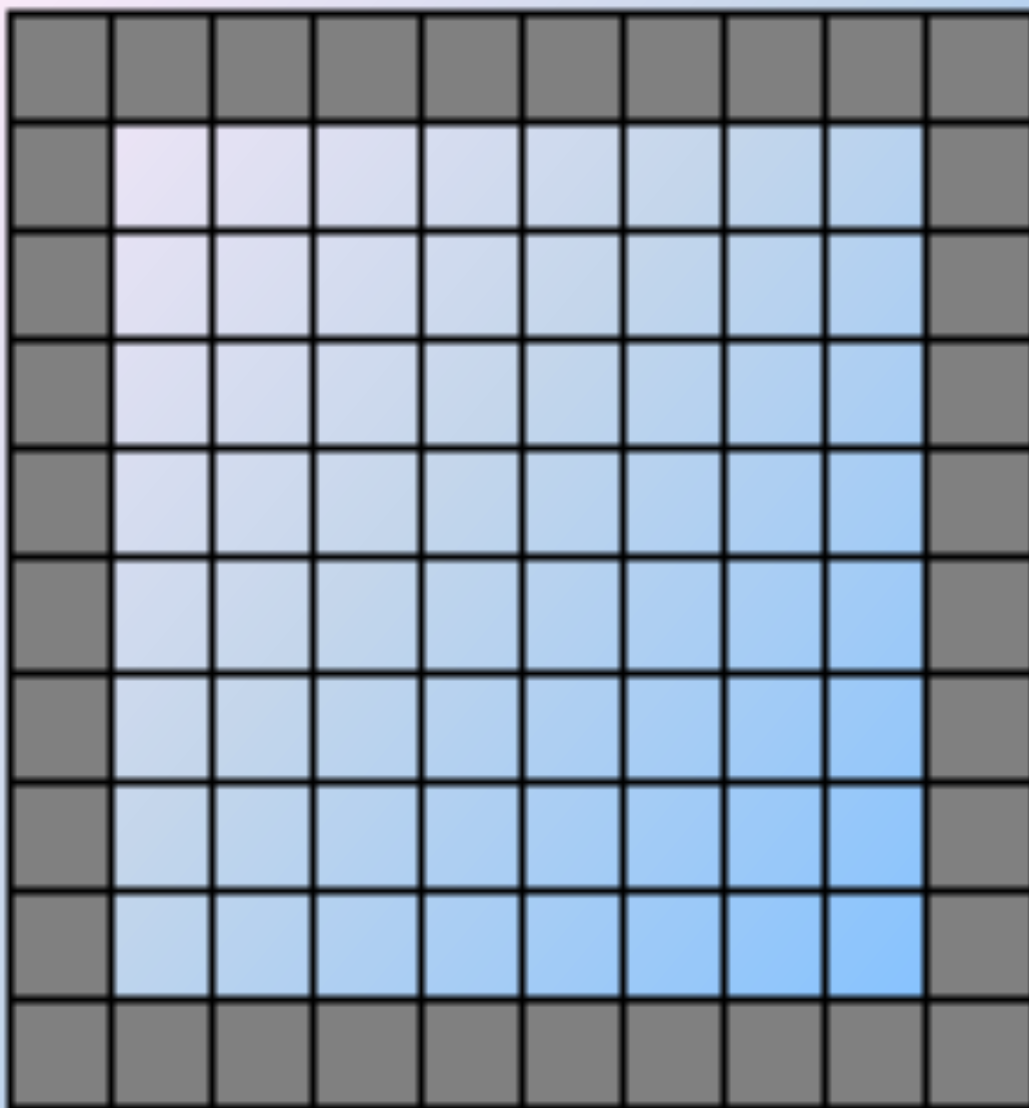
)



47 OUT OF
100

47
100

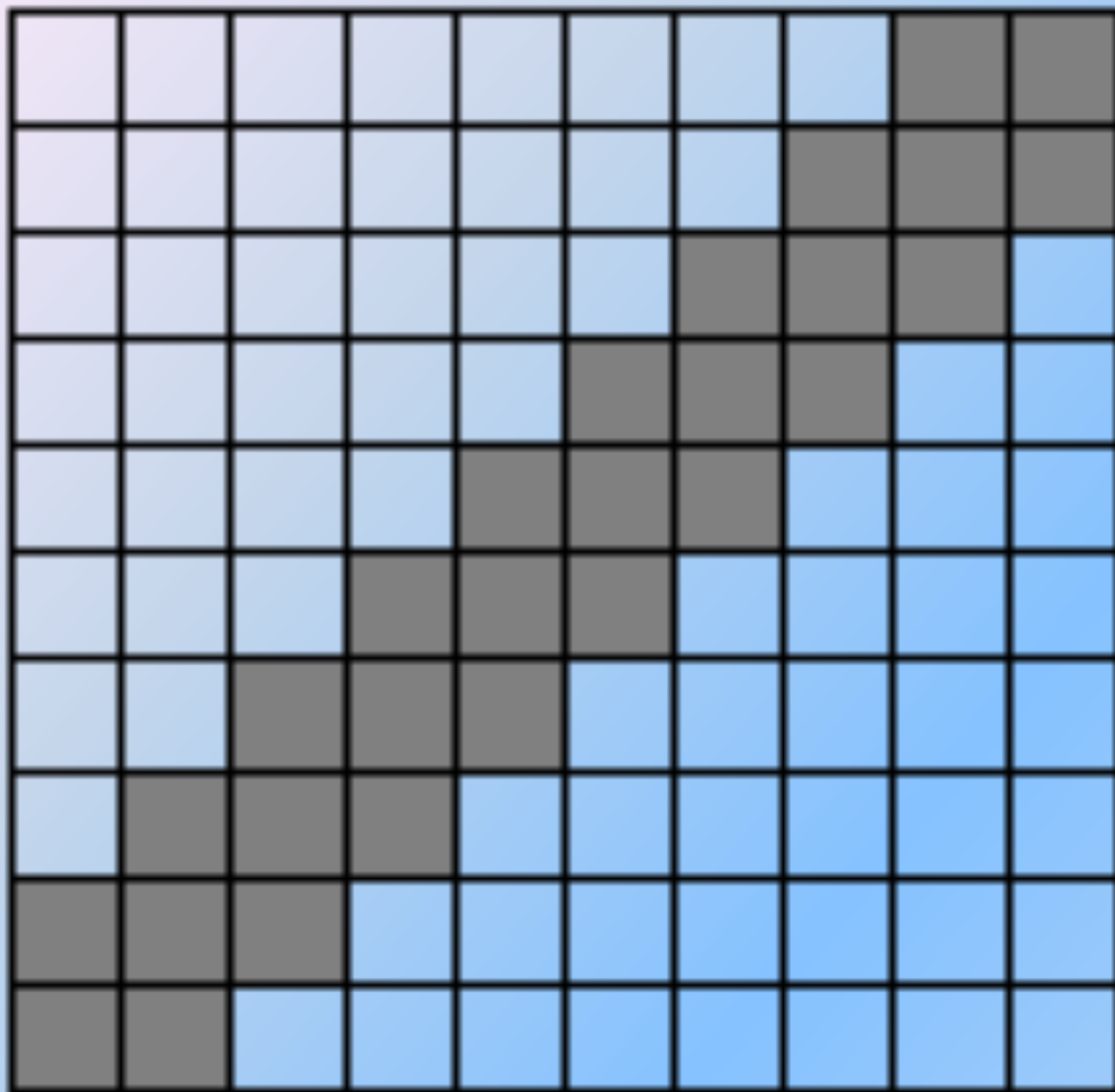
47%



36 OUT OF
100

36
100

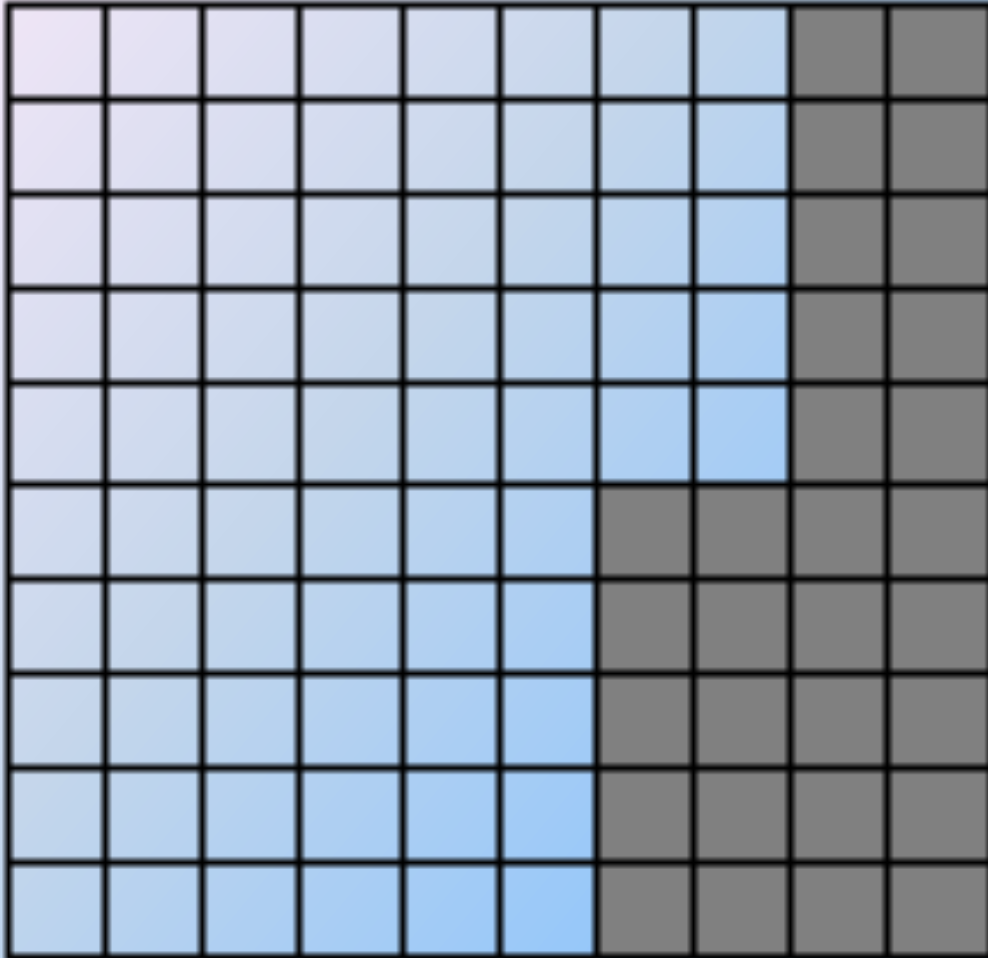
36%



28 OUT OF
100

28
100

28%

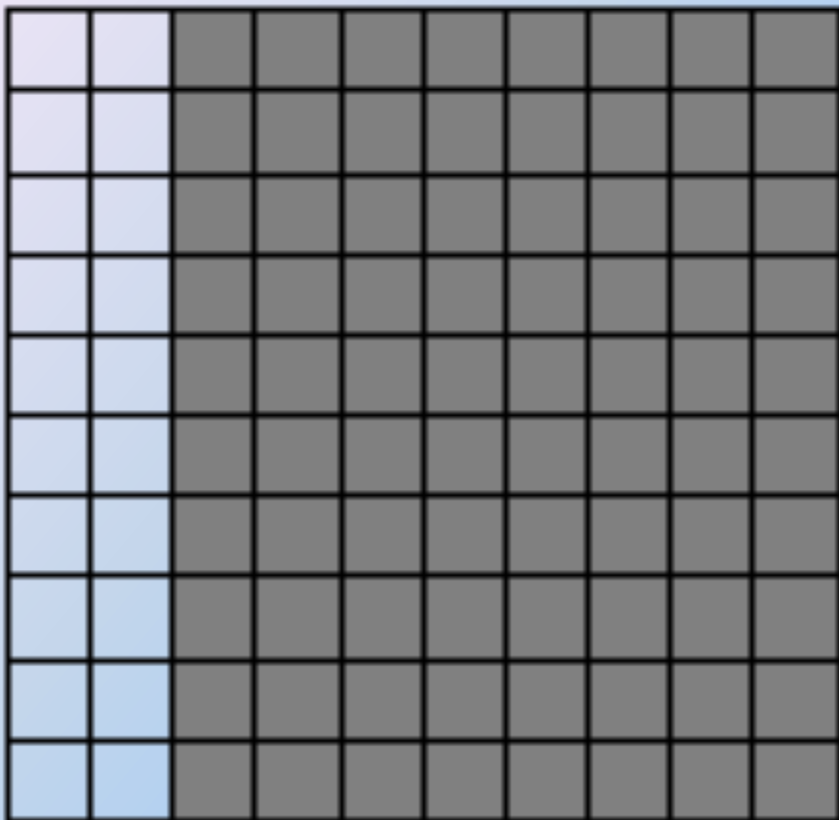


30 OUT OF
100

30
100

30%

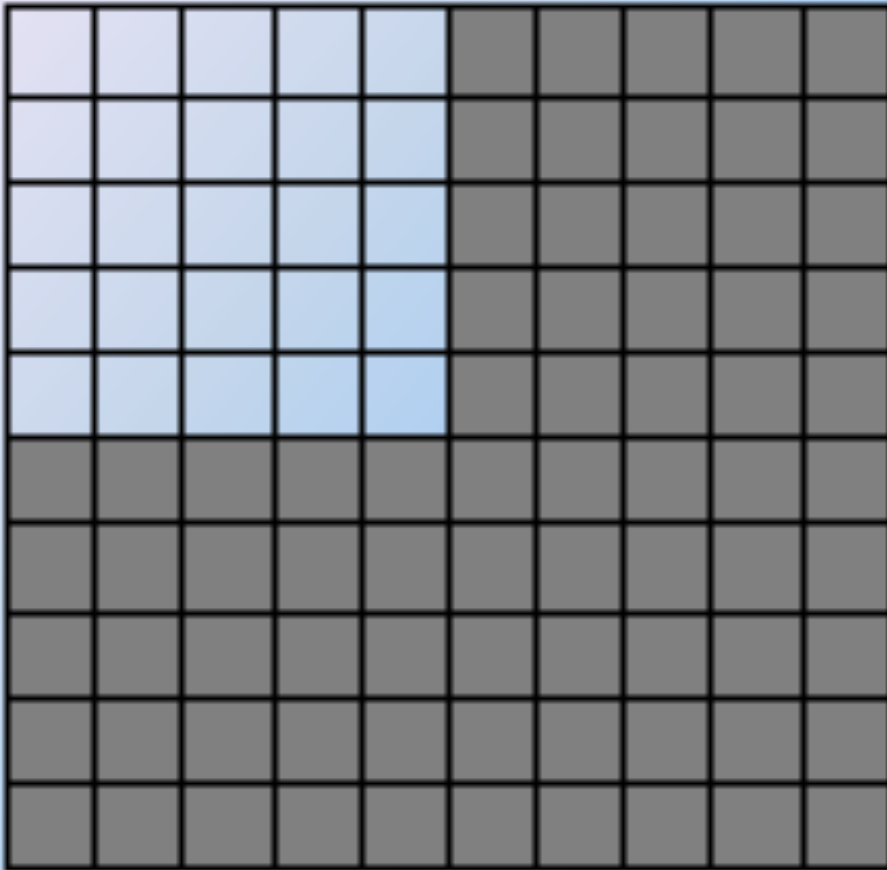
(e)



80 OUT OF
100

80
100

80%



75 OUT OF
100

75
100

75%

Percentages of Amounts

- We can find percentages of numbers. E.g. 10% of 100.

Percentages of Amounts

- Calculate 50% of 60

$$50\% = \frac{1}{2}$$

100%	
50%	50%

$$\frac{1}{2} \text{ of } 60 = 60 \div 2 = 30$$

60	
30	30

Percentages of Amounts

- Calculate 10% of 60

$$10\% = \frac{1}{10}$$

[illegible]

$$\frac{1}{10} \text{ of } 60 = 60 \div 10 = 6$$

[illegible]

Percentages of Amounts

- Calculate 10% of 150

$$10\% = \frac{1}{10}$$

[illegible]

$$\frac{1}{10} \text{ of } 150 = 150 \div 10 = 15$$

[illegible]

Percentages of Amounts

- Calculate 10% of 12

$$10\% = \frac{1}{10}$$

[illegible]

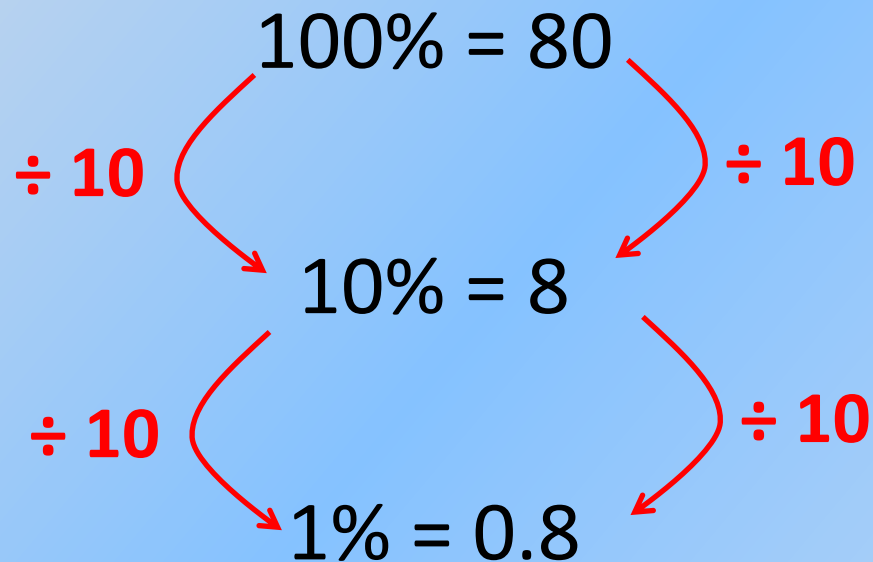
$$\frac{1}{10} \text{ of } 12 = 12 \div 10 = 1.2$$

[illegible]

Shortcuts!

Once you know how to work out 10% you can use this to work out any percentage like 1%, 5%, 20% etc.

To work out 1% you need to divide by 10 to work out 10% first and then divide by 10 again to work out 1%



Or ... to find 1% you could divide by 100.

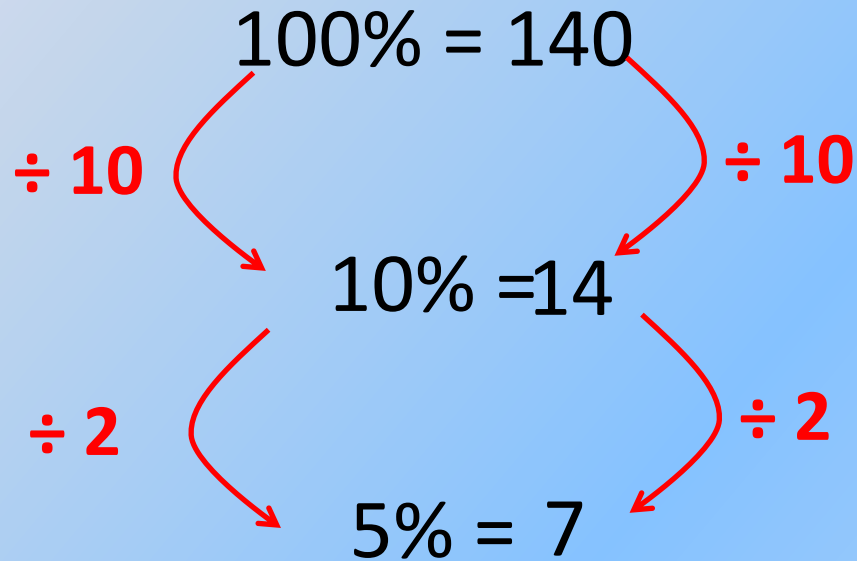
$$100\% = 80$$

$\div 100$ $\div 100$

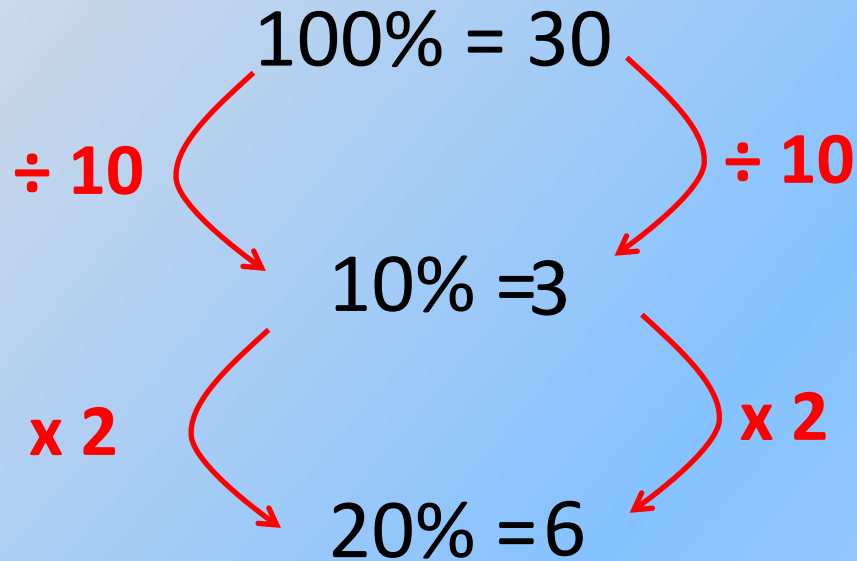
$$1\% = 0.8$$

Thousands	Hundreds	Tens	Units	Tenths	Hundredths
		8	0		

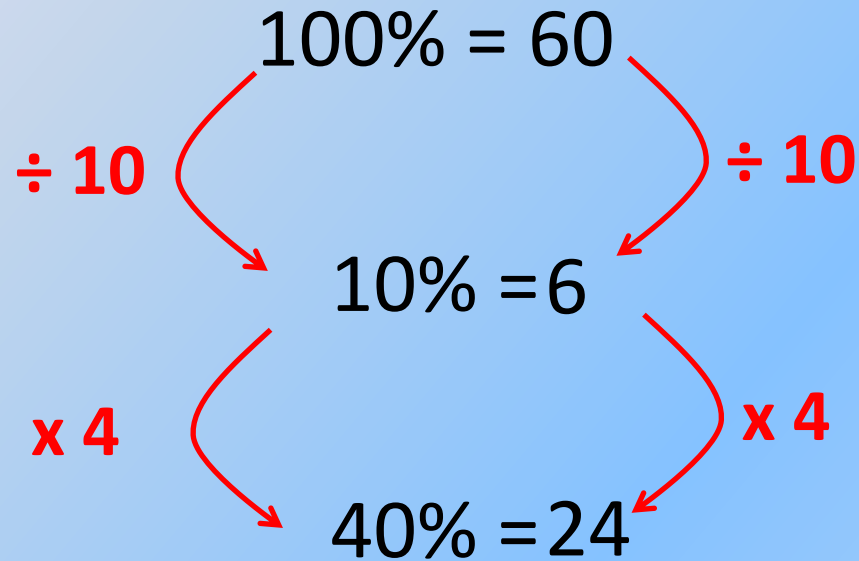
5% of 140



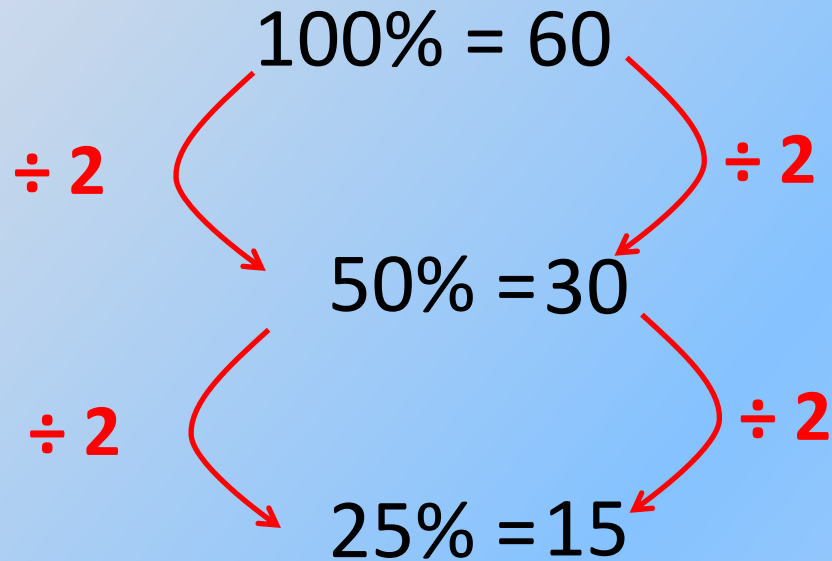
20% of 30



40% of 60



25% of 60



- To find **10%** divide the original number by ten.
- To find **20%** find 10% and double it.
- To find **50%** half it.
- To find **25%** half it, and half it again.
- To find **5%** find 10% and half it.
- To find **1%** divide by 100.

Percentages of Amounts

- We can use these results to calculate any percentage by adding 10%, 5% and 1% together

Find 30% of 120

~~Find 10%~~

~~$120 \div 10 = 12$~~

Find 30%

$12 \times 3 = 36$

$30\% = 36$

Find 35% of 120

~~Find 10%~~

~~$120 \div 10 = 12$~~

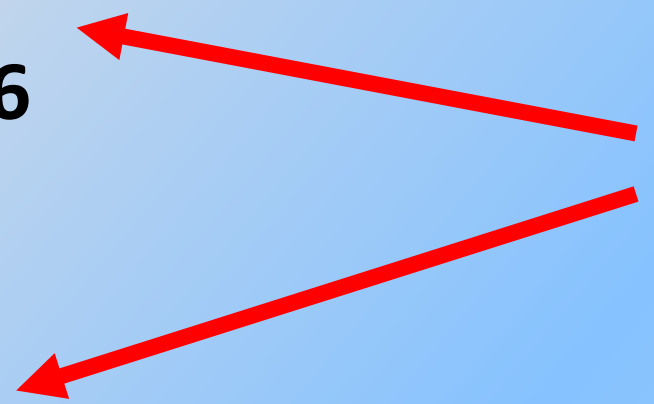
Find 30%

$12 \times 3 = 36$

Find 5%

$12 \div 2 = 6$

$35\% = 36 + 6 = 42$



The diagram consists of two red arrows. One arrow originates from the '36' in the 'Find 30%' calculation and points to the '36' in the final equation. The other arrow originates from the '6' in the 'Find 5%' calculation and points to the '6' in the final equation.

Find 23% of 120

~~Find 10%~~

~~$120 \div 10 = 12$~~

Find 20%

$12 \times 2 = 24$

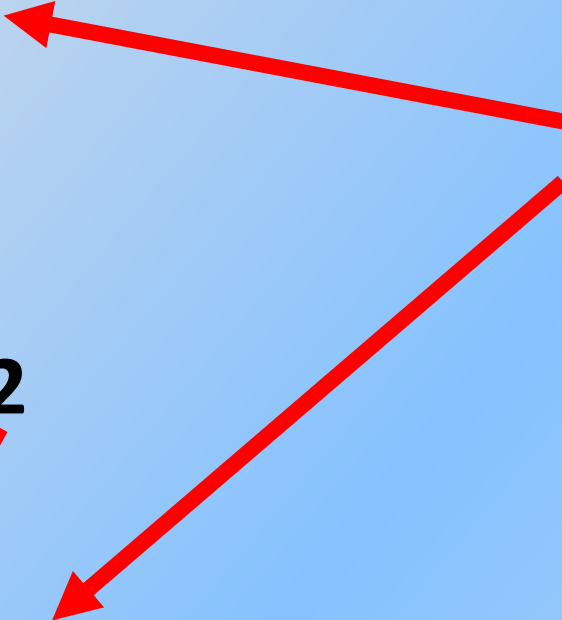
~~Find 1%~~

~~$12 \div 10 = 1.2$~~

Find 3%

$1.2 \times 3 = 3.6$

$23\% = 24 + 3.6 = 27.6$



The diagram consists of two red arrows. One arrow originates from the '23%' part of the final equation and points to the 'Find 20%' section. The other arrow originates from the '+ 3.6' part of the final equation and points to the 'Find 3%' section.

Derek's Discounts





Summer has officially begun. 50% off all hats!

50% off £15

100% = £15

50% = £15 ÷ 2 = £7.50

£15 – £7.50 = £7.50



Summer has officially begun. 25% off all hats!

25% off £6

$$\mathbf{100\% = \pounds 6}$$

$$\mathbf{50\% = \pounds 6 \div 2 = \pounds 3}$$

$$\mathbf{25\% = \pounds 3 \div 2 = \pounds 1.50}$$

$$\mathbf{\pounds 6 - \pounds 1.50 = \pounds 4.50}$$



Summer has officially begun. 25% off white T-shirts!

25% off £8

$$100\% = \text{£}8$$

$$50\% = \text{£}8 \div 2 = \text{£}4$$

$$25\% = \text{£}4 \div 2 = \text{£}2$$

$$\text{£}8 - \text{£}2 = \text{£}6$$



Going to a ball? 30% off
Men's formal wear. How
much is the Tuxedo now?

30% off £140

$$\mathbf{100\% = \pounds 140}$$

$$\mathbf{10\% = \pounds 140 \div 10 = \pounds 14}$$

$$\mathbf{30\% = \pounds 14 \times 3 = \pounds 42}$$

$$\mathbf{\pounds 140 - \pounds 42 = \pounds 98}$$



Getting married? 20% off
WEDDING DRESSES.

20% off £400

$$\mathbf{100\% = £400}$$

$$\mathbf{10\% = £400 \div 10 = £40}$$

$$\mathbf{20\% = £40 \times 2 = £80}$$

$$\mathbf{£400 - £80 = £320}$$