

Reverse Percentages

ANSWERS 

1

After a 20% increase, a price is £60.
Find the original price.

original	100%	?
now	120%	£60

the amount now, as a percentage of the original

$$120\% = £60$$

divide to find 1%

$$1\% = 0.5$$

multiply by 100

$$100\% = 50$$

Original £50

2

In a 10% off sale, a coat costs £54.
Find the original price.

original	100%	?
now	90%	£54

the amount now, as a percentage of the original

$$90\% = £54$$

divide to find 1%

$$1\% = 0.6$$

multiply by 100

$$100\% = 60$$

Original £60

3

After a 25% increase, a ticket costs £100. Find the original price.

original	100%	?
now	125%	£100

the amount now, as a percentage of the original

$$125\% = £100$$

divide to find 1%

$$1\% = 0.8$$

multiply by 100

$$100\% = 80$$

Original £80

4

A bike is reduced by 20% to £72.
Find the original price.

original	100%	?
now	80%	£72

the amount now, as a percentage of the original

$$80\% = £72$$

divide to find 1%

$$1\% = 0.9$$

multiply by 100

$$100\% = 90$$

Original £90

5

A bill is £69 after 15% is added.
Find the bill before.

original	100%	?
now	115%	£69

$$115\% = £69$$

$$1\% = 0.6$$

$$100\% = 60$$

Original £60

6

A phone is reduced by 30% to £84.
Find the original price.

original	100%	?
now	70%	£84

$$70\% = £84$$

$$1\% = 1.2$$

$$100\% = 120$$

Original £120

7

A club grows by 5% to 420 members.
How many members were there before?

$$420 \div 1.05 \times 100$$

Original 400 members

8

A hedge is cut back by 12% to 176 cm.
How tall was it before?

$$176 \div 0.88 \times 100$$

Original 200 cm

Reverse Percentages *further practice*

ANSWERS 

9

After a 15% price rise, a laptop costs £414. Find the price before the rise.

$$£414 \div 1.15$$

Original £360

10

A number is increased by 2.5%.
The answer is 287.
What was the number?

$$287 \div 1.025$$

Answer 280

11

In a 15% off sale, a lamp costs £68.
Which calculation gives the price before the sale? Work it out.

$$68 \times 0.85 \quad 68 \div 0.85$$

$$68 \times 1.15 \quad 68 \div 1.15$$

$$£68 \text{ is } 85\%, \text{ so } 68 \div 0.85$$

Answer $68 \div 0.85 = £80$

12

A puppy's mass goes up by 40% to 9.8 kg. What was its mass before?

$$9.8 \div 1.4$$

Original 7 kg

13

In a sale, a jacket is reduced by 20%.
It now costs £56. How much money was taken off the price of the jacket?

$$£56 \div 0.8 = £70, \text{ then } £70 - £56$$

Answer £14

14

A coat costs £63 after 10% off in shop A. The same coat costs £64 after 20% off in shop B. In which shop was the price of the coat higher before the sales?

$$£63 \div 0.9 = £70, £64 \div 0.8 = £80$$

Answer Shop B (£80)

15

In a sale, the price of a bike is reduced by 25%. The sale price is £60 less than the price before the sale. Find the price before the sale.

$$25\% = £60, \text{ so } 100\% = £60 \times 4$$

Original £240

16

A price is cut by 20% to £48.
Jo says that to find the price before, you add 20% of £48 to £48.
Is Jo right? Explain.

$$£48 \text{ is } 80\%, \text{ so } £48 \div 0.8$$

Answer No, it was £60, not £57.60