Reverse Percentages

SCAN ME

REVISE THIS TOPIC

1 A company's profit this year is £246,400.
This is a 12% increase from last year.

Work out the profit last year.

$x \times 1{\cdot}12 = 246400$

$x = \frac{246400}{1{\cdot}12}$

£ 220,000

(Total for Question 1 is 2 marks)

2 A laptop is on sale for £816 after a 15% discount has been applied.

Work out the original price of the laptop.

$x \times 0{\cdot}85 = 816$

$x = \frac{816}{0{\cdot}85}$

£ 960

(Total for Question 2 is 2 marks)

3 The value of a car is now £12,240.
This is a 32% reduction from its original value.

Work out the original value of the car.

$x \times 0{\cdot}68 = 12240$

$x = \frac{12240}{0{\cdot}68}$

£ 18,000

(Total for Question 3 is 2 marks)

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4 The number of subscribers to a channel is 540,000.
This is 25% more than the number of subscribers last year.

Work out how many subscribers the channel had last year.

$$x \times 1{\cdot}25 = 540{,}000$$
$$x = \frac{540000}{1{\cdot}25}$$

432,000

(Total for Question 4 is 2 marks)

5 Emma has 396 followers on social media.
This is 10% fewer than Josh.

Work out how many followers Josh has on social media.

$$x \times 0{\cdot}9 = 396$$
$$x = \frac{396}{0{\cdot}9}$$

440

(Total for Question 5 is 2 marks)

6 On Wednesday, a factory produced 1,054 toys.
This is 15% less than on Tuesday.

Work out how many toys the factory produced on Tuesday.

$$x \times 0{\cdot}85 = 1054$$
$$x = \frac{1054}{0{\cdot}85}$$

1240

(Total for Question 6 is 2 marks)

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7 35% of a number is 42

Work out the number.

÷7 (35% = 42) ÷7
x2 (5% = 6) x2
x10 (10% = 12) x10
100% = 120

120

(Total for Question 7 is 2 marks)

8 11% of a number is 27.5

Work out the number.

÷11 (11% = 27.5) ÷11
x100 (1% = 2.5) x100
100% = 250

250

(Total for Question 8 is 2 marks)

9 30% of a number is 55.5

Work out 140% of the number.

÷3 (30% = 55.5) ÷3
x14 (10% = 18.5) x14
140% = 259

259

(Total for Question 9 is 2 marks)

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10 Mia ran 56.7 km this week.
This is 35% **more** than last week.

Work out how far Mia ran **last week**.

$x \times 1.35 = 56.7$

$x = \frac{56.7}{1.35}$

42 km

(Total for Question 10 is 2 marks)

11 On Friday, a store sold 48 video games.
This is 20% **fewer** than Thursday.

Work out how many video games were sold on **Thursday**.

$x \times 0.8 = 48$

$x = \frac{48}{0.8}$ $\quad x = \frac{480}{8}$

60

(Total for Question 11 is 2 marks)

12 A mobile game had 69850 downloads this week.
This is 27% more than the previous week.

Work out how many downloads the game had the previous week.

$x \times 1.27 = 69850$

$x = \frac{69850}{1.27}$

55000

(Total for Question 12 is 2 marks)

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13 Emma buys a new book with 550 pages.
She reads the book on Saturday and Sunday.

On Sunday she read 286 pages.
This is 30% more pages than she read on Saturday.

Work out how many pages of the book Emma will still have left to read.

$x \times 1.3 = 286$

$x = \frac{286}{1.3}$

$x = 220$

$220 + 286 = 506$

$550 - 506 = 44$

44

(Total for Question 13 is 4 marks)

14 Oberon and Europa are moons of Uranus and Jupiter.
The mass of Europa is 60% more than Oberon.

The mass of Europa is 4.8×10^{22} kg

Work out the mass of Oberon giving your answer in standard form.

$x \times 1.6 = 4.8 \times 10^{22}$

$x = \frac{4.8 \times 10^{22}}{1.6}$

3×10^{22} kg

(Total for Question 14 is 3 marks)

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15 Rich adds £36 to his savings account.
This increases the amount of money Rich's savings by 12%

Work out how much money was in Rich's savings account originally.

÷12 (12% = £36) ÷12
(1% = £3)
×100 (100% = £300) ×100

300

(Total for Question 15 is 2 marks)

16 A jar contains some sweets.
Poppy eats 39 of the sweets in the jar.
This reduces the number of sweets in the jar by 25%

Work out how many sweets are now (75%) in the jar.

×3 (25% = 39 sweets) ×3
(75% = 117 sweets)

117

(Total for Question 16 is 2 marks)

17 A library gets 240 new books.
This increases the number of books in the library by 8%.

Work out how many books were in the library originally.

÷8 (8% = 240 books) ÷8
×100 (1% = 30 books) ×100
(100% = 3000 books)

3000

(Total for Question 17 is 2 marks)

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18 The pass mark for an exam decreases by 8 marks between 2024 and 2025.
These 8 marks represent a 5% decrease in the pass mark.

(a) Work out the pass mark for the exam in 2024.

5% = 8 marks (×2)
10% = 16 marks (×10)
100% = 160 marks

160

(2)

(b) Work out the pass mark for the exam in 2025.

160 − 8 = 152

152

(1)

(Total for Question 18 is 3 marks)

19 A bag contains counters that are either red, blue or green.
48 of the counters are red.
40% of the counters are red.
There are the same number of blue counters as green counters.

Work out the number of blue counters in the bag.

40% = 48 counters (÷4)
10% = 12 counters (×10)
100% = 120 counters

120 − 48 = 72
72 ÷ 2 = 36

36

(Total for Question 19 is 4 marks)

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20 George has 3 attempts at the long jump.

His second jump is 10% further than his first jump.
His third jump is 20% further than his second jump.

His best jump was 7.26 m

Work out the mean of his three jumps.

$x \times 1.2 = 7.26$

$x = \frac{7.26}{1.2}$

$x = 6.05$

$y \times 1.1 = 6.05$

$y = \frac{6.05}{1.1}$

$y = 5.5$

$5.5 + 6.05 + 7.26 = 18.81$

$18.81 \div 3 = 6.27$

6.27 ..... m

(Total for Question 20 is 5 marks)

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