

4.5 Answers

GCSE (Year 10) Mathematics Percentages II

4.5.1 Solution to 4.2 Example of Percentage Profit

$$\begin{aligned}\frac{645 - 575}{575} \times 100 &= \frac{70}{575} \times 100 \\ &= 12 \% \text{ profit}\end{aligned}$$

4.5.2 Solution to 4.3 Example of Percentage Decrease

$$(i) \quad \frac{587000}{5500000} \times 100 = 10.67 \% \text{ deforested}$$

$$(ii) \quad 0.27 \times 5500000 = 1\,485\,000$$

$$(iii) \quad \frac{1\,485\,000}{130\,395} = 11.4 \text{ Englands}$$

4.5.3 Solution to 4.4 Exercise

Answer 1

$$\frac{92 - 57}{57} \times 100 = 61.4\%$$

Answer 2

$$\frac{9214 - 7431}{7431} \times 100 = 24\%$$

Answer 3

$$(i) \quad \frac{91500 - 68500}{68500} \times 100 = 33.6\% \text{ profit}$$

$$(ii) \quad \frac{262500 - 91500}{91500} \times 100 = 187\% \text{ profit}$$

$$(iii) \quad \frac{262500 - 230000}{262500} \times 100 = 12.4\% \text{ loss}$$

$$(iv) \quad \frac{282500 - 230000}{230000} \times 100 = 22.8\% \text{ profit}$$

Answer 4

$$(i) \quad \frac{511 - 395}{395} \times 100 = 29.4\% \text{ more}$$

$$(ii) \quad \frac{511 - 395}{511} \times 100 = 22.7\% \text{ less}$$

Notice the two answers are not the same.

What is the same is $0.294... \times 395$ and $0.227... \times 511$

Answer 5

$$\frac{2.54 - 2.36}{2.54} \times 100 = 7.1\% \text{ fall in car sales}$$

Answer 6

$$(i) \quad \frac{111 - 97}{97} \times 100 = 14.4\% \text{ more cost}$$

$$(ii) \quad \frac{400 - 250}{250} \times 100 = 60\% \text{ more capacity}$$

(iii) The most obvious answer is that the medium drink is better value for money than the small drink.

A standard fast food outlet technique is to have a small capacity drink at a high price and a much larger capacity drink for a marginally higher price.

The small capacity drink is there to make the next size up seem good value for money although it's actually extortionately priced and a high profit item for the fast food outlet.

Answer 7

$$\frac{2\,950\,000 - 41\,000}{2\,950\,000} \times 100 = 98.6\%$$

Answer 8

$$\frac{118000 - 24400}{118000} \times 100 = 79.3\%$$

"The US space community came to lament ceasing production of the Saturn V as continued production would have allowed the International Space Station, which has a mass of 420000 kg, to be built using four Saturn V launches, rather than 18 launches of the Space Shuttle"

Answer 9

$$\frac{406.42 - 280}{280} \times 100 = 45.15\% \text{ increase in } CO_2$$

Answer 10

(i) $\frac{10.7 - 3.7}{10.7} \times 100 = 65.4\% \text{ fall in value}$

(ii) $3400 \times 0.346 = \text{£}1176.4$

Answer 11

(i) $\frac{17852 - 14512}{14512} \times 100 = 23\%$

(ii) $\frac{5.22}{34.82} \times 100 = 15\%$

Answer 12

(i) $\frac{6.2 - 2.5}{2.5} \times 100 = 148\% \text{ increase in average weight}$

(ii) $\frac{112 - 48}{112} \times 100 = 57.1\% \text{ decrease in time to market}$