

5.5 Answers

GCSE (Year 10) Mathematics Percentages II

5.5.1 Solution to 5.2 Example

The key technique is to call to unknown, original salary before the increase x

$$x \times 1.025 = 84283$$

$$x = \frac{84283}{1.025}$$

$$x = \text{£}82\,227.32$$

5.5.2 Solution to 5.3 Example

Call the original purchase price of the bond, x

$$x \times 1.04^5 = 15208.16$$

$$x = \frac{15208.16}{1.04^5}$$

$$x = \text{£}12500$$

5.5.3 Solution to 5.4 Exercise

Answer 1

Let x be the cost of the meal before VAT is applied.

$$x \times 1.20 = 24.90$$

$$x = \frac{24.90}{1.20}$$

$$= \text{£}20.75$$

Answer 2

Let x be the cost of the magazine before the reduction.

$$x \times 0.65 = 85.80$$

$$x = \frac{85.80}{0.65}$$

$$= \text{£}132$$

Answer 3

Let x be Jalina's salary before the increase,

$$x \times 1.05 = 252000$$

$$x = \frac{252000}{1.05}$$

$$x = \text{HK\$ } 240\,000$$

Answer 4

Let x be the UK's coal consumption in 2015,

$$x \times (1 - 0.62) = 14.2$$

$$x = \frac{14.2}{0.38}$$

$$= 37.4 \text{ million metric tons of coal}$$

Answer 5

Let x be the previous world record.

$$x \times (1 - 0.0114) = 9.58$$

$$x = \frac{9.58}{0.9886}$$

$$= 9.69 \text{ seconds}$$

Answer 6

Let x be the cost of the new Ford Ka+,

$$x \times 0.85^3 = 7032$$

$$x = \frac{7032}{0.85^3}$$

$$= \text{£ } 11\,450$$

Answer 7

(a)

$$8500 \times 1.023^3 = \$9100 \quad \text{to the nearest dollar}$$

(b) Let x be the value of the house, 1st January 2015.

$$x \times 1.15 \times 0.92 = 687700$$

$$x = \frac{687700}{1.15 \times 0.92}$$

$$x = \$650\,000$$

Answer 8

Let x be the value of the book on 1st May 2018

$$x \times 1.2 = 15$$

$$x = \frac{15}{1.2}$$

$$= \text{£ } 12.50 \quad \Leftarrow \text{ must have the zero}$$

Answer 9

Let x be the normal price of the umbrella.

$$x \times 0.82 = 25.83$$

$$x = \frac{25.83}{0.82}$$

$$= £31.50 \quad \Longleftarrow \text{must have the zero}$$

Answer 10

As there are 75% of red squirrels in Scotland, there must be 25% in the remainder of the UK. $\therefore$ 120 000 red squirrels in Scotland, and 40 000 in remainder of UK. This gives 80 000 more red squirrels in Scotland than in the remainder of the UK.

Answer 11

James bought a book for £5.50, so the normal price would be £5.
On Friday, another copy of this book would therefore cost £4.50.