

GCSE Maths: Rates of pay, unit prices and best buys (Higher): answers

GCSE Maths - Units and Compound Measures - Higher - Lesson 16.6

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch16-units-compound-measures/higher/rates-of-pay-unit-prices-and-best-buys/

Exercise 16H Rates of pay, unit prices and best buys Calculator allowed

1 Work out the total pay.

- (a) £8.40 per hour for 25 hours

Answer: £210

- (b) £11.50 per hour for 36 hours

Answer: £414

- (c) £10.25 per hour for 40 hours

Answer: £410

- (d) £9 per hour for 35 hours normal pay plus 5 hours overtime at time and a half

Answer: £382.50

2 Use the unitary method to work out each cost.

- (a) 6 apples cost £2.70. Find the cost of 10 apples.

Answer: £4.50

- (b) 8 pens cost £5.20. Find the cost of 5 pens.

Answer: £3.25

- (c) 12 eggs cost £3.00. Find the cost of 30 eggs.

Answer: £7.50

- (d) 15 litres of petrol cost £22.50. Find the cost of 40 litres.

Answer: £60

3 Which is the better buy? Work out the cost per unit for each and compare.

- (a) Cereal: A 375 g for £1.50, or B 750 g for £2.85 (compare the cost per 100 g)

Answer: B

- (b) Shampoo: A 250 ml for £1.80, B 400 ml for £2.60, C 500 ml for £3.50 (cost per 100 ml)

Answer: B

- (c) Eggs: 6 for £1.74, 12 for £3.24, 15 for £4.20 (cost per egg)

Answer: the box of 12

4 A car uses 6.5 litres of petrol per 100 km. Petrol costs £1.50 per litre. Work out the cost of petrol for a 260 km journey.

Answer: £25.35

- 5 A tap fills a bath at a rate of 12 litres per minute. The bath needs 90 litres. How long does it take? Give your answer in minutes and seconds.

Answer: 7 minutes 30 seconds

- 6 Write £3.60 per kg as pence per 100 g.

Answer: 36p per 100 g

- 7 Priya earns £18 720 a year. She works 36 hours a week for 52 weeks a year. Work out her pay per hour.

Answer: £10

- 8 Tom says: "A bigger pack is always cheaper per gram." Give an example that shows he is wrong.

Answer: e.g. 500 g for £1.20 (24p per 100 g) is cheaper than 1 kg for £2.60 (26p per 100 g)

- 9 A town has 54 000 people living in an area of 18 km^2 . (a) Work out the population density in people per km^2 . (b) A second town has the same population density and an area of 45 km^2 . How many people live there?

(a) Density

Answer: 3000 people per km^2

(b) People in second town

Answer: 135 000

- 10 Paint covers 12 m^2 per litre. A wall is 5.5 m long and 2.4 m high and needs two coats. How many 1-litre tins of paint are needed?

Answer: 3 tins

- 11 An appliance uses 2.5 kilowatts (kW) of power. It is used for 3 hours. Electricity costs 28p per kilowatt-hour (kWh), where $\text{kWh} = \text{kW} \times \text{hours}$. Work out the cost.

Answer: £2.10

- 12 Brand X sells 500 ml of juice for £1.10 with "20% extra free". Brand Y sells 450 ml for 90p. Which brand is better value?

Answer: Brand X (18.33p per 100 ml compared with 20p per 100 ml)

- 13 A plumber charges £48 for the first hour and £31 for each further hour. How much does a job lasting 4.5 hours cost?

Answer: £156.50

- 14 A pack of n pencils costs $£p$. (a) Write an expression for the cost of one pencil in pence. (b) A second pack has $3n$ pencils and costs $£2.4p$. Show that the second pack is better value.

(a) Cost of one pencil

Answer: $100p/n$ pence

(b) Show better value

Answer: Second pack: $80p/n$ pence each, which is less than $100p/n$

- 15 Raj is paid £12 an hour for the first 35 hours each week, and time and a half for any hours after that. One week he is paid £528. How many hours did he work?

Answer: 41 hours

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