

# Ratio H Assessment

# THE ANSWERS

Higher Level



*All questions*

Clip	Grade	Title of clip	Question(s)	Marked out of	Score	%
38.....	2.....	Introduction to Ratio .....	1 - 2	10	___	___
39.....	2.....	Using Ratio for Recipe Questions .....	3 - 4	7	___	___
40.....	2.....	Introduction to Percentages .....	5	6	___	___
41.....	2.....	Value for Money .....	6 - 7	6	___	___
42.....	2.....	Introduction to Proportion .....	8 - 10	8	___	___
105.....	3.....	Exchanging Money .....	11	5	___	___
106.....	3.....	Sharing using Ratio .....	12 - 14	10	___	___
107.....	3.....	Ratios, Fractions and Graphs.....	15 - 16	8	___	___
108.....	3.....	Increase/Decrease by a Percentage .....	17 - 18	5	___	___
109.....	3.....	Percentage Change.....	19 - 20	7	___	___
110.....	3.....	Reverse Percentage Problems .....	21 - 22	6	___	___
111.....	3.....	Simple Interest.....	23 - 24	5	___	___
142.....	4.....	Compound Units .....	25 - 26	9	___	___
143.....	4.....	Distance-Time Graphs.....	27	5	___	___
144.....	4.....	Similar Shapes .....	28 - 29	7	___	___
164.....	5.....	Compound Interest and Depreciation .....	30 - 31	6	___	___
199.....	7.....	Direct and Inverse Proportion .....	32 - 34	10	___	___

*Out of 120*      TOTAL SCORE \_\_\_\_\_

Final Percentage  %



- 11) Emma is travelling to Munich.  
She changes £450 into Euros (€).  
The exchange rate is £1 = €1.37
- a) Work out how many € Emma gets.

€ 616.50 2

On her return home, Emma still has €152  
She wants to change them back to £  
The exchange rate is now £1 = €1.33

- b) Work out how many £ she would get.

£ 114.29 3

- 12) Bill, Tim and Rose share £120 between them  
in the ratio 2 : 1 : 3  
How much should each of them receive?

Bill £40

Tim £20

Rose £60 3

- 13) Yasmin and Ibrahim buy a present for their dad,  
sharing the cost in the ratio 6 : 5  
Ibrahim pays £15  
How much did the present cost?

£ 33 3

- 14) To obtain the desired colour for his project,  
Rick is mixing red paint with yellow paint  
in the ratio 5 : 3  
A litre of red paint costs £4.99 and a litre of  
yellow paint costs £7.99  
If Rick needs 40 litres of his desired colour,  
how much will it cost him?

£ 244.60 4

- 15) In a class, the ratio of boys to girls is 3 : 2

- a) What fraction of the class are boys?

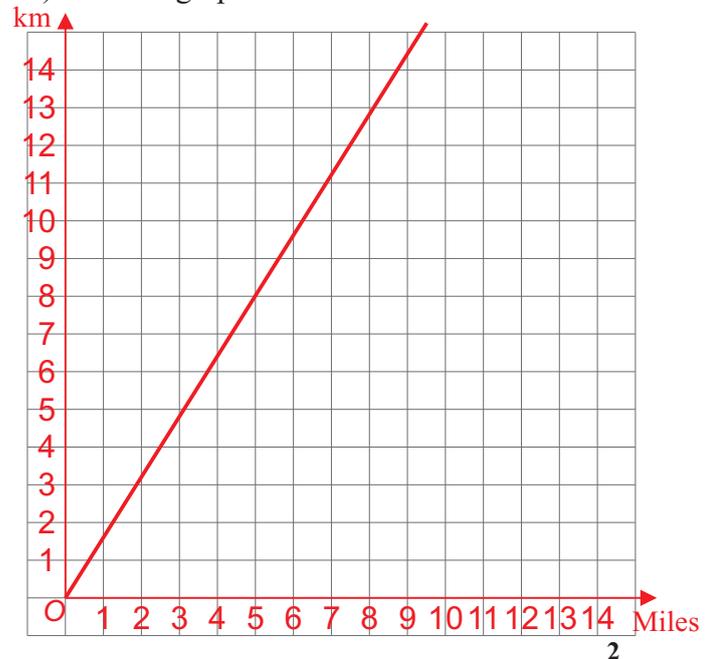
$\frac{3}{5}$  1

- b) What fraction of the class are girls?

$\frac{2}{5}$  1

- 16) Miles and km are in the ratio 5 : 8

- a) Draw a graph to illustrate this.



- b) Use your graph to convert 12 km to miles.

7.5 miles 1

Carol is on a 1200 km journey by car.  
She has already travelled 300 miles.

- c) Work out how many km she has left.

720 km 3

17) A television is sold at £799 + VAT.  
VAT is at 20%.  
What is the total cost of the television?

£ 958.80

18) Tiles cost £1.65 each.  
*Tiles4u* offers “30% off when you spend over £200”.  
How much will it cost to buy 150 tiles?

£ 173.25

19) A plane increases its cruising speed from 400 mph to 550 mph.  
Work out the percentage speed increase.

37.5 %

20) Harry made 75 mince pies for the school fair.  
He sold 80% of those at 80p each and the remaining 20% at “3 for £2.00”  
The 75 mince pies cost him £35 to make.  
Work out his percentage profit (to 1 d.p.).

65.7 %

21) In a sale, prices are reduced by 12%.  
Hani bought a pair of boots for the sale price of £61.60

What was the original price of the boots?

£ 70

22) Jane was paid £154 this week.  
This is a 10% increase from last week.  
How much was she paid last week?

£ 140

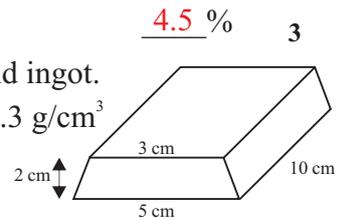
23) Fran has £350 in her savings account.  
3% simple interest is paid each year.  
How much interest will she earn in 5 years?

£ 52.50

24) Ellie invested £900 in the bank for 4 years.  
She earned £162 simple interest.  
What was the simple interest rate per annum?

4.5 %

25) The diagram shows a gold ingot.  
The density of gold is  $19.3 \text{ g/cm}^3$



Calculate the mass of the ingot in kg.

1.544 kg

26) a) A motorcycle travels 90 km in  $1\frac{1}{2}$  hours.  
Work out its average speed in km/h.

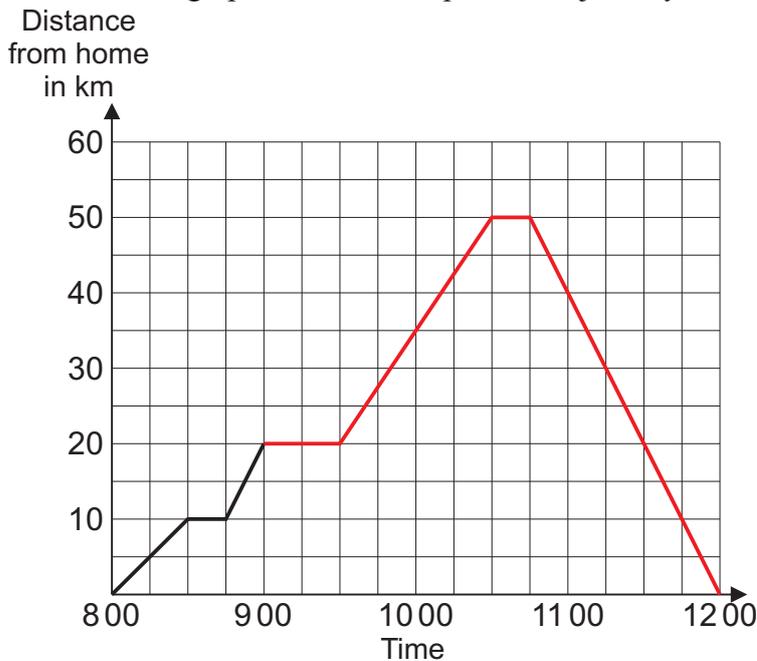
60 km/h

b) A car travels at an average speed of 50 mph for 30 mins and then 70 mph for 2 hours.

Work out the average speed of the car (mph) over the whole journey.

66 mph

- 27) Phil sets off from home on a bike ride.  
The graph below shows part of his journey.



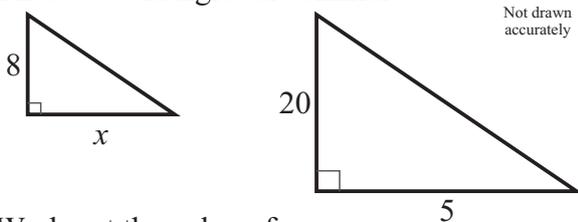
- a) Work out Phil's average speed between 8 am and 9 am.

20 km/h 1

At 9 am, Phil stops for a 30 mins break. He then cycles a further 30 km away from home in 1 hr. After another 15 mins break, he finally cycles back home at an average speed of 40 km/h.

- b) Complete the distance/time graph. 4

- 28) These two triangles are similar.



Work out the value of  $x$ .

$x =$  2 2

- 29) a) Work out the length  $AE$ .

10 cm 2

- b) Work out the perimeter of trapezium  $ABDE$ .

30 cm 3

- 30) Eve invests £3 000 at 3.6% compound interest per annum.

Work out the value of the investment after 5 years.

£3580.31 3

- 31) A £55 000 car depreciates at the rate of 18% each year.

How much would it be worth after 10 years?

£7559.64 3

- 32)  $y$  is directly proportional to  $x$ .  
When  $x = 70$ ,  $y = 10$

- a) Find a formula for  $y$  in terms of  $x$ .

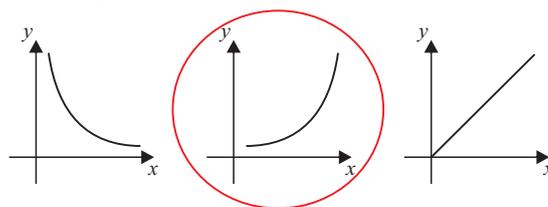
$y = \frac{1}{7}x$  3

- b) Calculate the value of  $y$  when  $x = 245$

35 1

- 33) Circle the graph matching this statement:

“ $y$  is proportional to the square of  $x$ ”



1

- 34)  $y$  is inversely proportional to  $x^2$ .  
When  $x = 4$ ,  $y = 10$

Work out the value of  $y$  when  $x = 10$

1.6 5