Ratio to Percentage - Worksheet

Skill

Group A - Two part ratios to percentages

Express each of the following ratios using percentages:

1) $2:3$ **2)** $4:6$ **3)** $8:12$

4) $28:22$ **5)** $14:11$ **6)** $42:33$

7) $160:40$ **8)** $320:80$ **9)** $640:160$

10) $1:4$ **11)** $5:20$ **12)** $15:60$

Group B - Three part ratios to percentages

Express each of the following ratios using percentages:

1) $2:1:2$ **2)** $7:11:7$ **3)** $7:3:10$

4) $2:5:3$ **5)** $3:1:1$ **6)** $1:2:2$

7) $10:7:8$ **8)** $4:5:1$ **9)** $8:5:7$

10) $1:2:1$ **11)** $4:3:3$ **12)** $27:12:11$

Group C - Fractional ratios to percentages

Express each of the following ratios using percentages:

1) $\frac{3}{5} : \frac{2}{5}$ **2)** $\frac{3}{10} : \frac{7}{10}$ **3)** $\frac{13}{25} : \frac{12}{25}$

4) $\frac{4}{5} : \frac{2}{10}$ **5)** $\frac{10}{25} : \frac{3}{5}$ **6)** $\frac{2}{5} : \frac{1}{5} : \frac{2}{5}$

7) $\frac{3}{10} : \frac{1}{10} : \frac{6}{10}$ **8)** $\frac{3}{10} : \frac{1}{10} : \frac{3}{5}$ **9)** $\frac{33}{110} : \frac{44}{110} : \frac{33}{110}$

10) $\frac{16}{80} : \frac{32}{80} : \frac{32}{80}$ **11)** $\frac{30}{150} : \frac{60}{150} : \frac{2}{5}$ **12)** $\frac{30}{200} : \frac{120}{200} : \frac{50}{200}$

Ratio to Percentage - Worksheet

Applied

1) The ratio of red and brown bricks in a truck is 3: 5.

(a) What percentage of bricks in the truck are red?

(b) What percentage of bricks in the truck are brown?

2) The ratio of t-shirts to shorts to jumpers in a drawer is 1: 2: 5.

(a) What percentage of the clothes in the drawer are t-shirts?

(b) What percentage of the clothes in the drawer are shorts?

(c) What percentage of the clothes in the drawer are jumpers?

3) Sarah works between 1pm and 4pm.
Tony works between 4pm and 8pm.
Zach works between 8pm and 9pm.

(a) What percentage of hours worked between 1pm and 9pm does Sarah work?

(b) What percentage of hours worked between 1pm and 9pm does Tony work?

(c) What percentage of hours worked between 1pm and 9pm does Zach work?

4) 37% of the pupils in a year group travel to school by car.
Twice as many pupils travel to school by bus than by bike.
Write the ratio of the number of pupils who travel to school by car to bus to bike.

5) In a clothes shop, there are blue, green and red shirts on sale.
60% of the shirts are blue.
There are three times more red shirts than green shirts.
Write the ratio of the number of blue shirts to red shirts to green shirts in its simplest form.

Ratio to Percentage - Exam Questions

1) There is £80 in a pot which is shared between three people.
Alex gets £20, Marcus gets £32 and Ben gets £28

What ratio of the money do they each get?
Give the ratio as percentages.

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(2 marks)

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2) There are only blue, yellow and green counters in a bag.
The number of blue, yellow and green counters are in the ratio 4: 9: 7

Work out what percentage of the counters in the bag are green.

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(2 marks)

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3) Lewis, Maisie and Oscar each earn the same salary each month.

Lewis saves 26% of his salary and spends the rest.
Maisie spends $\frac{3}{5}$ of her salary and saves the rest.
The amount of salary Oscar saves to the amount he spends is 3: 7

Work out who saves the most each month.

You must show how you get your answer.

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(3 marks)

Ratio to Percentage - Answers

	Question	Answer
	Skill Questions	
Group A	Express each of the following ratios using percentages: **1)** 2 : 3 **2)** 4 : 6 **3)** 8 : 12 **4)** 28 : 22 **5)** 14 : 11 **6)** 42 : 33 **7)** 160 : 40 **8)** 320 : 80 **9)** 640 : 160 **10)** 1 : 4 **11)** 5 : 20 **12)** 15 : 60	 **1)** 40% : 60% **2)** 40% : 60% **3)** 40% : 60% **4)** 56% : 44% **5)** 56% : 44% **6)** 56% : 44% **7)** 80% : 20% **8)** 80% : 20% **9)** 80% : 20% **10)** 20% : 80% **11)** 20% : 80% **12)** 20% : 80%
Group B	Express each of the following ratios using percentages: **1)** 2 : 1 : 2 **2)** 7 : 11 : 7 **3)** 7 : 3 : 10 **4)** 2 : 5 : 3 **5)** 3 : 1 : 1 **6)** 1 : 2 : 2 **7)** 10 : 7 : 8 **8)** 4 : 5 : 1 **9)** 8 : 5 : 7 **10)** 1 : 2 : 1 **11)** 4 : 3 : 3 **12)** 27 : 12 : 11	 **1)** 40% : 20% : 40% **2)** 28% : 44% : 28% **3)** 35% : 15% : 50% **4)** 20% : 50% : 30% **5)** 60% : 20% : 20% **6)** 20% : 40% : 40% **7)** 40% : 28% : 32% **8)** 40% : 50% : 10% **9)** 40% : 25% : 35% **10)** 25% : 50% : 25% **11)** 40% : 30% : 30% **12)** 54% : 24% : 22%

Ratio to Percentage - Answers

Group C	Express each of the following ratios using percentages: **1)** $\frac{3}{5} : \frac{2}{5}$ **2)** $\frac{3}{10} : \frac{7}{10}$ **3)** $\frac{13}{25} : \frac{12}{25}$ **4)** $\frac{4}{5} : \frac{2}{10}$ **5)** $\frac{10}{25} : \frac{3}{5}$ **6)** $\frac{2}{5} : \frac{1}{5} : \frac{2}{5}$ **7)** $\frac{3}{10} : \frac{1}{10} : \frac{6}{10}$ **8)** $\frac{3}{10} : \frac{1}{10} : \frac{3}{5}$ **9)** $\frac{33}{110} : \frac{44}{110} : \frac{33}{110}$ **10)** $\frac{16}{80} : \frac{32}{80} : \frac{32}{80}$ **11)** $\frac{30}{150} : \frac{60}{150} : \frac{2}{5}$ **12)** $\frac{30}{200} : \frac{120}{200} : \frac{50}{200}$	**1)** 60% : 40% **2)** 30% : 70% **3)** 52% : 48% **4)** 80% : 20% **5)** 40% : 60% **6)** 40% : 20% : 40% **7)** 30% : 10% : 60% **8)** 30% : 10% : 60% **9)** 30% : 40% : 30% **10)** 20% : 40% : 40% **11)** 20% : 40% : 40% **12)** 15% : 60% : 25%

Ratio to Percentage - Answers

	Question	Answer
	Applied Questions	
1)	The ratio of red and brown bricks in a truck is $3:7$. **a)** What percentage of bricks in the truck are red? **b)** What percentage of bricks in the truck are brown?	 **a)** 30% **b)** 70%
2)	The ratio of t-shirts to shorts to jumpers in a drawer is $1:2:5$ **a)** What percentage of the clothes in the drawer are t-shirts? **b)** What percentage of the clothes in the drawer are shorts? **c)** What percentage of the clothes in the drawer are jumpers?	 **a)** 12.5% **b)** 25% **c)** 62.5%
3)	Sarah works between 1pm and 4pm. Tony works between 4pm and 8pm. Zach works between 8pm and 9pm. **a)** What percentage of hours worked between 1pm and 9pm does Sarah work? **b)** What percentage of hours worked between 1pm and 9pm does Tony work? **c)** What percentage of hours worked between 1pm and 9pm does Zach work?	$S:T:Z = 3:4:1$ **a)** 37.5% **b)** 50% **c)** 12.5%
4)	37% of the pupils in a year group travel to school by car. Twice as many pupils travel to school by bus than by bike. Write the ratio of the number of pupils who travel to school by car to bus to bike.	Car:Bus:Bike $37:42:21$
5)	In a clothes shop, there are blue, green and red shirts on sale. 60% of the shirts are blue. There are three times more red shirts than blue shirts. Write the ratio of the number of blue shirts to red shirts to green shirts in its simplest form.	Blue:Green:Red $6:3:1$

Ratio to Percentage - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	There is £80 in a pot which is shared between three people. Alex gets £20, Marcus gets £32 and Ben gets £28 What ratio of the money do they each get? Give the ratio as percentages.	$\frac{20}{80} : \frac{32}{80} : \frac{28}{80}$ **(1)** 25% : 40% : 35% **(1)**	**(2)**
2)	There are only blue, yellow and green counters in a bag. The number of blue, the number of yellow and the number of green counters are in the ratio 4 : 9 : 7. Work out what percentage of the counters in the bag are green.	$4 + 9 + 7 = 20$ or $\frac{7}{20}$ **(1)** 20% : 45% : 35% 35% are green **(1)**	**(2)**
3)	Lewis, Maisie and Oscar each earn the same salary each month. Lewis saves 26% of his salary and spends the rest. Maisie spends $\frac{3}{5}$ of her salary and saves the rest. The amount of salary Oscar saves to the amount he spends is 3: 7 Work out who saves the most each month. You must show how you get your answer.	$\frac{3}{5} = 60\%$ (Maisie saves 40%) **(1)** $\frac{3}{10} = 30\%$ (Oscar saves 30%) **(1)** Maisie saves the most each month **(1)**	**(3)**