Dividing Ratios - Worksheet

Skill

Group A - Share the quantity in a ratio

Share the quantity in the ratio provided:

1) Share £100 in the ratio 2: 3

2) Share $200L$ in the ratio 4: 1

3) Share $250m$ in the ratio 1: 4

4) Share \$120 in the ratio 2: 1

5) Share $24cm$ in the ratio 5: 1

6) Share $6g$ in the ratio 1: 2

7) Share $150cl$ in the ratio 7: 8

8) Share $2.2km$ in the ratio 7: 4

9) Share €42 in the ratio 3: 2: 2

10) Share $76.5kg$ in the ratio 11: 4

11) Share 10.8 tonnes in the ratio 4: 5: 1

12) Share $0.62mm$ in the ratio 5: 2: 1

Group B - Find the original amount

Calculate the original amount given one part of the ratio

1) $A:B = 1:4$
Person A receives £10.
What was the original amount of money?

2) $A:B = 6:1$
Person B receives £7.
What was the original amount of money?

3) $A:B = 3:2$
Person A receives £15.
What was the original amount of money?

4) $A:B = 5:4$
Person B receives £16.
What was the original amount of money?

5) $A:B = 7:3$
Person A receives £350. What was the original amount of money?

6) $A:B:C = 1:2:3$
Person C receives £33.
What was the original amount of money?

7) $A:B:C = 5:2:7$
Person B receives £24.
What was the original amount of money?

8) $A:B = 1:5$
Person B receives £32.
What was the original amount of money?

9) $A:B = 7:5$
Person B receives £76.
What was the original amount of money?

10) $A:B = 0.5:0.3$
Person A receives £18.
What was the original amount of money?

11) $A:B = 0.2:0.9$
Person B receives £40.50
What was the original amount of money?

12) $A:B:C = 0.1:0.08:1.2$
Person C receives £9.60
What was the original amount of money?

Dividing Ratios - Worksheet

Group C - Find the value of one share

Calculate one value of the amount shared into a ratio.

1) $£100$ was shared into the ratio $A:B = 1:4$.
Calculate the value of A.

2) $300km$ was shared into the ratio $A:B = 1:2$.
Calculate the value of B.

3) $\$450$ was shared into the ratio $A:B = 5:4$.
Calculate the value of B.

4) $260m$ was shared into the ratio $A:B = 7:6$. Calculate the value of A.

5) $42cm^2$ was shared into the ratio $A:B = 4:3$.
Calculate the value of B.

6) $51g$ was shared into the ratio $A:B = 10:7$.
Calculate the value of A.

7) $6.4L$ was shared into the ratio $A:B = 5:3$.
Calculate the value of A.

8) $12ml$ was shared into the ratio $A:B = 0.5:1$.
Calculate the value of A.

9) $€21$ was shared into the ratio $A:B = 0.25:0.8$.
Calculate the value of A.

10) $220ft$ was shared into the ratio $A:B:C = 3:2:5$.
Calculate the value of C.

11) $3.85s$ was shared into the ratio
$A:B:C = 0.2:0.3:0.05$.
Calculate the value of C.

12) $6.2 \times 10^3 km$ was shared into the ratio
$A:B:C = 4:1:3$.
Calculate the value of A.
Write your answer in standard form.

Dividing Ratios - Worksheet

Applied

1) **(a)** £250 is shared between Simon and Tami in the ratio 2: 3.
How much money does Simon receive?
How much money does Tami receive?

(b) The ratio of boys to girls in a school sports day is 13: 18. If there were 837 participants, how many of them were boys?

2) **(a)** £1200 has been collected for local charities. It will be split between three charities in the ratio 2: 3: 4.
How much is the largest portion of money?

(b) An amount of money has been divided between Ali, Bob and Caleb in the ratio 2: 3: 1. Caleb received £42 more than Bob. What was the original amount of money?

3) **(a)** The prize money from a game show is shared amongst the team in the ratio $A: B: C = 2: 5: 3$. If the prize money was £1500, how much more money does person B receive than person A?

(b) Person C donates 40% of his share to charity. State the ratio of the amount donated to charity, to the total prize money in its simplest form.

4) **(a)** Three angles in triangle T have the ratio 1: 2: 3. What type of triangle is T?

(b) Four angles in the quadrilateral Q have the ratio 2: 3: 3: 2. Give the names of two possible types of quadrilateral that Q could be.

Dividing Ratios - Exam Questions

1) **(a)** Rajinder and Sara share £90 in the ratio 1: 2.
Work out how much each of them get.

.....

(3)

(b) Sara gives £10 to Rajinder.

Write down the ratio of Ranjinder's money to Sara's money.
Give your ratio in its simplest terms.

.....

(3)

(6 marks)

---

2) **(a)** The ratio of students in a school who are right- to left- handed is 8: 1. There are 2223 students in the school. How many are right-handed?

.....

(3)

(b) Another student enrols at the school. They are left handed. Calculate the new ratio of right- to left-handed students in the simplest form.

.....

(3)

(6 marks)

Dividing Ratios - Exam Questions

3) **(a)** Triangle A has three angles in the ratio $x - 10 : 2x : 2x + 10$.

Calculate the size of each angle.

.....

(3)

(b) What type of triangle is triangle A?

.....

(1)

(4 marks)

---

4) **(a)** Three rucksacks have a combined weight of $57kg$. Rucksack C is $2kg$ heavier than rucksack A, which is $1kg$ lighter than rucksack B. What are the weights of each rucksack?

.....

(4)

(b) Each person wants to carry the same weight of rucksack, but maintain $57kg$ across the three of them. What should happen to make the ratio of their rucksacks $1 : 1 : 1$?

.....

(1)

(5 marks)

Dividing Ratios - Answers

	Question	Answer
	Skill Questions	
Group A	Share the quantity in the ratio provided **1)** Share £100 in the ratio 2: 3. **2)** Share $200L$ in the ratio 4: 1. **3)** Share $250m$ in the ratio 1: 4. **4)** Share \$120 in the ratio 2: 1. **5)** Share $24cm$ in the ratio 5: 1. **6)** Share $6g$ in the ratio 1: 2. **7)** Share $150cl$ in the ratio 7: 8. **8)** Share $2.2km$ in the ratio 7: 4. **9)** Share €42 in the ratio 3: 2: 2. **10)** Share $76.5kg$ in the ratio 11: 4. **11)** Share 10.8 tonnes in the ratio 4: 5: 1. **12)** Share $0.62mm$ in the ratio 5: 2: 1.	 **1)** £40: £60 **2)** $160L$: $40L$ **3)** $50m$: $200m$ **4)** \$80: \$40 **5)** $20cm$: $4cm$ **6)** $2g$: $4g$ **7)** $70cl$: $80cl$ **8)** $1.4km$: $0.8km$ **9)** €18: €12: €12 **10)** $56.1kg$: $20.4kg$ **11)** $4.32t$: $5.4t$: $1.08t$ **12)** 0.3875: 0.155: 0.0775 (mm)
Group B	Calculate the original amount given one part of the ratio **1)** $A:B = 1:4$. Person A receives £10. What was the original amount of money? **2)** $A:B = 6:1$. Person B receives £7. What was the original amount of money? **3)** $A:B = 3:2$. Person A receives £15. What was the original amount of money? **4)** $A:B = 5:4$. Person B receives £16. What was the original amount of money? **5)** $A:B = 7:3$. Person A receives £350. What was the original amount of money?	 **1)** $1 + 4 = 5, 10 \times 5 =$ £50 **2)** $6 + 1 = 7, 7 \times 7 =$ £49 **3)** $3 + 2 = 5, 15 \div 3 = 5$ $5 \times 5 =$ £25 **4)** $5 + 4 = 9, 16 \div 4 = 4$ $9 \times 4 =$ £36 **5)** $7 + 3 = 10, 350 \div 7 = 50$ $50 \times 10 =$ £500

Dividing Ratios - Answers

Group B contd	**6)** $A:B:C = 1:2:3$. Person C receives £33. What was the original amount of money?	**6)** $1 + 2 + 3 = 6, 33 \div 3 = 11$ $11 \times 6 = £66$
	7) $A:B:C = 5:2:7$. Person B receives £24. What was the original amount of money?	**7)** $5 + 2 + 7 = 14,$ $24 \div 2 = 12$ $12 \times 14 = £168$
	8) $A:B = 1:5$. Person B receives £32. What was the original amount of money?	**8)** $1 + 5 = 6\,, 32 \div 5 = 6.4$ $6.4 \times 6 = £38.40$
	9) $A:B = 7:5$. Person B receives £76. What was the original amount of money?	**9)** $7 + 5 = 12, 76 \div 5 = 15.2$ $15.2 \times 12 = £182.40$
	10) $A:B = 0.5:0.3$. Person A receives £18. What was the original amount of money?	**10)** $0.5 + 0.3 = 0.8,$ $18 \div 0.5 = 36$ $36 \times 0.8 = £28.80$
	11) $A:B = 0.2:0.9$. Person B receives £40.50 What was the original amount of money?	**11)** $0.2 + 0.9 = 1.1,$ $40.5 \div 0.9 = 45$ $45 \times 1.1 = £49.50$
	12) $A:B:C = 0.1:0.08:1.2$. Person C receives £9.60. What was the original amount of money?	**12)** $0.1 + 0.08 + 1.2 = 1.38,$ $9.6 \div 1.2 = 8$ $8 \times 1.38 = £11.04$
Group C	Calculate one value of the amount shared into a ratio	
	1) £100 was shared into the ratio $A:B = 1:4$. Calculate the value of A.	**1)** $100 \div (1 + 4) = 20$ $1 \times 20 = £20$
	2) $300km$ was shared into the ratio $A:B = 1:2$. Calculate the value of B.	**2)** $300 \div (1 + 2) = 100$ $2 \times 100 = 200km$
	3) \$450 was shared into the ratio $A:B = 5:4$. Calculate the value of B.	**3)** $450 \div (5 + 4) = 50$ $50 \times 4 = \$200$
	4) $260m$ was shared into the ratio $A:B = 7:6$. Calculate the value of A.	**4)** $260 \div (7 + 6) = 20$ $20 \times 7 = 140m$
	5) $42cm^2$ was shared into the ratio $A:B = 4:3$. Calculate the value of B.	**5)** $42 \div (4 + 3) = 6$ $6 \times 3 = 18cm^2$

Dividing Ratios - Answers

	6) $51g$ was shared into the ratio $A:B = 10:7$. Calculate the value of A.	**6)** $51 \div (10 + 7) = 3$ $3 \times 10 = 30g$
	7) $6.4L$ was shared into the ratio $A:B = 5:3$. Calculate the value of A.	**7)** $6.4 \div (5 + 3) = 0.8$ $0.8 \times 5 = 4L$
	8) $12ml$ was shared into the ratio $A:B = 0.5:1$. Calculate the value of A.	**8)** $12 \div (0.5 + 1) = 8$ $8 \times 0.5 = 4ml$
	9) €21 was shared into the ratio $A:B = 0.25:0.8$. Calculate the value of A.	**9)** $21 \div (0.25 + 0.8) = 20$ $20 \times 0.25 = €5$
	10) $220ft$ was shared into the ratio $A:B:C = 3:2:5$. Calculate the value of C.	**10)** $220 \div (3 + 2 + 5) = 22$ $22 \times 5 = 110ft$
	11) $3.85s$ was shared into the ratio $A:B:C = 0.2:0.3:0.05$. Calculate the value of C.	**11)** $3.85 \div (0.2 + 0.3 + 0.05) = 7$ $7 \times 0.05 = 0.35$
	12) $6.2 \times 10^3 km$ was shared into the ratio $A:B:C = 4:1:3$. Calculate the value of A. Write your answer in standard form.	**12)** $6.2 \times 10^3 \div (4 + 1 + 3) = 775$ $775 \times 4 = 3100$ 3.1×10^3

Dividing Ratios - Answers

	Question	Answer
	Applied Questions	
1)	**a)** £250 is shared between Simon and Tami in the ratio 2: 3. How much money does Simon receive? How much money does Tami receive?	**a)** $2 + 3 = 5$ $250 \div 5 = 50$ $2 \times 50 = 100$ $3 \times 50 = 150$ Simon receives £100 Tami receives £150
	b) The ratio of boys to girls in a school sports day is 13: 18. If there were 837 participants, how many of them were boys?	**b)** $13 + 18 = 31$ $837 \div 31 = 27$ $27 \times 13 = 351$ boys
2)	**a)** £1800 has been collected for local charities. It will be split between three charities in the ratio 2: 3: 4. How much is the largest portion of money?	**a)** $2 + 3 + 4 = 9$ $1800 \div 9 = 200$ $200 \times 4 = 800$ £800 is the largest portion of money
	b) An amount of money has been divided between Ali, Bob and Caleb in the ratio 2: 3: 1. Caleb received £42 more than Bob. What was the original amount of money? bake a cake for 60 people. Does she have enough of each ingredient?	**b)** $3 - 1 = 2$ $42 \div 2 = 21$ $2 + 3 + 1 = 6$ $6 \times 21 = 126$ £126 is the original amount of money
3)	**a)** The prize money from a game show is shared amongst the team in the ratio $A: B: C = 2: 5: 3$. If the prize money was £1500, how much more money does person B receive than person A?	**a)** $1500 \div (2 + 5 + 3)$ $= 150$ $5 - 2 = 3$ $3 \times 150 = £450$
	b) Person C donates 40% of his share to charity. State the ratio of the amount donated to charity, to the total prize money in its simplest form.	**b)** $450 \times 0.4 = £180$ $180: 1500$ $3: 25$

Dividing Ratios - Answers

4)	**a)** Three angles in triangle T have the ratio $1:2:3$. What type of triangle is T?	**a)** $1 + 2 + 3 = 6$ $180 \div 6 = 30$ $30°, 60°, 90°$ Right angle triangle
	b) Four angles in the quadrilateral Q have the ratio $2:3:3:2$. Give the names of two possible types of quadrilateral that Q could be.	**b)** $2 + 3 + 3 + 2 = 10$ $360 \div 10 = 36$ $36 \times 2 = 72°$ $36 \times 3 = 108°$ Rhombus / Parallelogram / Isosceles Trapezium

Dividing Ratios - Mark Scheme

	Question	Answer	
	Exam Questions		
1) (a)	Rajinder and Sara share £90 in the ratio 1: 2. Work out how much each of them get	**(a)** $90 \div (1 + 2)$ Rajinder = £30 Sara = $2 \times 30 = £60$	**(1)** **(1)** **(1)**
(b)	Sara gives £10 to Rajinder. Write down the ratio of Ranjinder's money to Sara's money. Give your ratio in its simplest terms.	**(b)** $30 + 10 = 40$ **and** $60 - 10 = 50$ $40: 50$ $4: 5$	 **(1)** **(1)** **(1)**
2) (a)	The ratio of students in a school who are right- to left- handed is 8: 1. There are 2223 students in the school. How many are right-handed?	**(a)** $8 + 1 = 9$ $2223 \div 9 = 247$ $247 \times 8 = 1976$	**(1)** **(1)** **(1)**
(b)	Another student enrols at the school. They are left handed. Calculate the new ratio of right- to left-handed students in the simplest form.	**(b)** 2224 students, 248 left-handed $1976: 248$ $247: 31$	**(1)** **(1)** **(1)**
3) (a)	Triangle A has three angles in the ratio $x - 10: 2x: 2x + 10$. Calculate the size of each angle.	**(a)** $x - 10 + 2x + 2x + 10 = 180$ $x = 36°$ $26°, 72°, 82°$	**(1)** **(1)** **(1)**
(b)	What type of triangle is triangle A?	**(b)** Scalene	**(1)**

Dividing Ratios - Mark Scheme

4) (a)	Three rucksacks have a combined weight of $57kg$. Rucksack C is $2kg$ heavier than rucksack A, which is 1kg lighter than rucksack B. What are the weights of each rucksack?	**(a)** $x : x + 1 : x + 2$ $3x + 3 = 57$ $x = 18$ $A = 18\,kg,\ B = 19kg$, **and** $C = 20kg$	**(1)** **(1)** **(1)** **(1)**
(b)	Each person wants to carry the same weight of rucksack, but maintain $57kg$ across the three of them. What should happen to make the ratio of their rucksacks 1: 1: 1?	**(b)** C gives A $1kg$	**(1)**