

GRADE 7 MATHEMATICS

Ratio, Proportion & Rates

Complete Printable Worksheet Pack

Includes	6 Practice Worksheets + 6 Answer Keys
Skills	Ratios • Sharing • Unit Rates • Proportion • Scale • Real-Life Reasoning
Level	Grade 7 / International Curriculum Friendly
Format	A4 • Print Ready

Worksheet 1 — Ratios & Equivalent Ratios

Name: _____ Date: _____

1. Simplify the ratio 42:56.
2. Write an equivalent ratio to 5:8 with the second term 40.
3. Complete: $7:9 = 35: \underline{\hspace{1cm}}$.
4. Complete: $\underline{\hspace{1cm}}:24 = 5:8$.
5. A class has 18 girls and 12 boys. Write the ratio girls:boys in simplest form.
6. The ratio red beads:blue beads is 3:5. If there are 45 blue beads, how many red beads are there?
7. A map uses the scale 1 cm : 6 km. What distance does 7.5 cm represent?
8. Two quantities are in the ratio 4:7 and their total is 88. Find both quantities.
9. The ratio of cats to dogs at a shelter is 5:3. There are 64 animals altogether. How many cats and dogs are there?
10. A recipe uses flour:sugar = 7:2. If 450 g of flour is used, how much sugar is needed?

Show your working clearly. Use units where appropriate.

Answer Key — Worksheet 1

Check your method as well as your final answer.

1. 3:4
2. 25:40
3. 45
4. 15
5. 3:2
6. 27 red beads
7. 45 km
8. 32 and 56
9. 40 cats and 24 dogs
10. $128 \frac{4}{7}$ g sugar (about 128.6 g)

Worksheet 2 — Simplifying & Sharing in a Ratio

Name: _____ Date: _____

1. Simplify 84:126.
2. Simplify 144:96.
3. Share \$180 in the ratio 2:3.
4. Share 420 points between A and B in the ratio 5:2.
5. Divide 96 sweets between three children in the ratio 2:3:7.
6. A 72 cm ribbon is cut in the ratio 5:7. Find the two lengths.
7. A school has 360 students in Years 7 and 8. The ratio Year 7:Year 8 is 4:5. How many students are in each year?
8. A paint mixture uses blue:white in the ratio 3:7. How much white paint is needed if 240 mL of blue paint is used?
9. Two numbers are in the ratio 7:11 and differ by 36. Find the numbers.
10. A prize fund of \$1,260 is shared among three winners in the ratio 2:3:4. Find each share.

Show your working clearly. Use units where appropriate.

Answer Key — Worksheet 2

Check your method as well as your final answer.

1. 2:3
2. 3:2
3. \$72 and \$108
4. 300 and 120
5. 16, 24, 56
6. 30 cm and 42 cm
7. Year 7 = 160; Year 8 = 200
8. 560 mL
9. 63 and 99
10. \$280, \$420, \$560

Worksheet 3 — Rates & Unit Rates

Name: _____ Date: _____

1. A car travels 240 km in 3 hours. Find its average speed.
2. 6 notebooks cost \$15. What is the cost per notebook?
3. A tap fills 18 litres in 4 minutes. Find the rate in litres per minute.
4. A cyclist travels 42 km in 2.5 hours. Find the average speed.
5. A 750 g bag of rice costs \$2.70. Find the price per kilogram.
6. A printer produces 420 pages in 7 minutes. How many pages per minute?
7. A train travels 315 km in 3.5 hours. Find its average speed.
8. Store A sells 8 pens for \$6.40. Store B sells 12 pens for \$9.00. Which store has the lower unit price, and by how much per pen?
9. A machine makes 1,260 parts in 9 hours. At the same rate, how many parts will it make in 14 hours?
10. A runner completes 5 km in 24 minutes. At the same average pace, approximately how long will 12.5 km take?

Show your working clearly. Use units where appropriate.

Answer Key — Worksheet 3

Check your method as well as your final answer.

1. 80 km/h
2. \$2.50
3. 4.5 L/min
4. 16.8 km/h
5. \$3.60/kg
6. 60 pages/min
7. 90 km/h
8. Store B; \$0.05 less per pen
9. 1,960 parts
10. 60 minutes

Worksheet 4 — Proportion & Scale

Name: _____ Date: _____

1. If 5 kg of apples cost \$14, what will 8 kg cost at the same rate?
2. A model car has a scale of 1:20. If the model is 18 cm long, how long is the real car?
3. On a map, 4 cm represents 30 km. What real distance is represented by 9.6 cm?
4. A recipe for 6 people needs 450 g of rice. How much rice is needed for 14 people?
5. A photograph is enlarged from 12 cm wide to 18 cm wide. If its original height is 8 cm, what is the new height?
6. A blueprint uses 1 cm : 2.5 m. A wall measures 7.2 cm on the blueprint. Find its real length.
7. 9 workers can complete a job in 12 days at the same rate. How many worker-days does the job require?
8. At the same rate, 6 workers take 15 days. How many days would 10 workers take?
9. A map scale is 1:50,000. Two towns are 7.4 cm apart on the map. Find the real distance in kilometres.
10. A mixture is made using concentrate:water = 2:7. How much total drink can be made from 1.2 L of concentrate?

Show your working clearly. Use units where appropriate.

Answer Key — Worksheet 4

Check your method as well as your final answer.

1. \$22.40
2. 360 cm = 3.6 m
3. 72 km
4. 1,050 g
5. 12 cm
6. 18 m
7. 108 worker-days
8. 9 days
9. 3.7 km
10. 5.4 L

Worksheet 5 — Real-Life Ratio & Rate Problems

Name: _____ Date: _____

1. A family drives 270 km using 18 L of fuel. Find the fuel efficiency in km/L.
2. A school orders 15 boxes containing 24 pencils each. The pencils are shared equally among 18 classes. How many pencils does each class receive?
3. A sports drink is mixed in the ratio concentrate:water = 1:5. How much water is needed to make 9 L of drink?
4. A shop marks up an item by using a price ratio cost:selling = 5:7. If the cost is \$45, find the selling price.
5. A recipe serves 8 people using 600 g of vegetables. How many grams are needed for 14 people?
6. A delivery van travels 168 km in 2 hours 24 minutes. Find its average speed in km/h.
7. A school trip has adults:students = 1:12. There are 156 students. How many adults are needed?
8. A phone plan gives 18 GB of data for \$27. Another gives 25 GB for \$35. Which has the lower cost per GB, and what is the difference per GB?
9. A tank is filled at 12 L/min for 18 minutes, then 45 L is used. How much water remains?
10. A map journey consists of 3.5 cm, 5.2 cm and 2.8 cm. The scale is 1 cm:4 km. Find the total journey distance.

Show your working clearly. Use units where appropriate.

Answer Key — Worksheet 5

Check your method as well as your final answer.

1. 15 km/L
2. 20 pencils per class
3. 7.5 L water
4. \$63
5. 1,050 g
6. 70 km/h
7. 13 adults
8. \$35 plan; difference \$0.05/GB
9. 171 L
10. 46 km

Worksheet 6 — Ratio, Proportion & Rates Challenge

Name: _____ Date: _____

1. The ratio A:B is 3:5 and B:C is 10:7. Find A:B:C in simplest whole-number form.
2. A quantity is increased in the ratio 5:7. The new value is 84. Find the original value.
3. A journey is completed at 72 km/h and takes 2 h 30 min. How long would the same journey take at 90 km/h?
4. A school has boys:girls = 7:9. After 24 boys join, the ratio becomes 5:6. Find the original numbers of boys and girls.
5. A recipe uses flour:sugar:butter = 5:2:3. The total mixture is 1.5 kg. Find the mass of each ingredient.
6. A car uses 7.5 L of fuel per 100 km. How much fuel is needed for a 420 km journey? If fuel costs \$1.80/L, find the cost.
7. A map scale is 1:25,000. A hiking route measures 14.8 cm on the map. The hiker walks at 4.5 km/h. How long will the route take, ignoring stops?
8. Two numbers are in the ratio 4:9. If 7 is added to each number, the new ratio is 3:5. Find the original numbers.
9. A machine produces 840 items in 7 hours. It then works at 120% of its original rate for 3 hours. How many items are produced altogether?
10. A quantity is divided among A, B and C in the ratio 2:5:7. B receives 180 more than A. Find the total quantity and C's share.

Show your working clearly. Use units where appropriate.

Answer Key — Worksheet 6

Check your method as well as your final answer.

1. 6:10:7
2. 60
3. 2 hours
4. 168 boys and 216 girls
5. Flour 750 g, sugar 300 g, butter 450 g
6. 31.5 L; \$56.70
7. 3.7 km; about 49 min 20 sec
8. 28 and 63
9. 1,440 items
10. Total 1,260; $C = 630$