

Name _____

Date _____

12.2 Sharing in a ratio — worksheet

Divide a quantity into two or more parts in a given ratio, and work backwards from one share to the total. · 49 questions · Show your working.

Remember

- **Add the ratio numbers** to find how many parts there are altogether.
- **Divide the total by that** to find what one part is worth.
- **Multiply** each ratio number by the value of one part.
- Three steps, always in that order: add, divide, multiply.
- **Check by adding the shares** — they must give the total back.
- The larger number in the ratio always takes the larger share.
- Working backwards: if one share is known, divide it by its ratio number to find one part.
- If two shares **differ** by a known amount, that difference is the difference of the ratio numbers, in parts.

A · Fluency — Add, divide, multiply.

- 1 Share **20** in the ratio **2 : 3**. What is the **larger** share?

- 2 Share **20** in the ratio **2 : 3**. What is the **smaller** share?

- 3 Share **40** in the ratio **3 : 5**. What is the **larger** share?

- 4 Share **40** in the ratio **3 : 5**. What is the **smaller** share?

- 5 Share **36** in the ratio **4 : 5**. What is the **larger** share?

- 6 Share **36** in the ratio **4 : 5**. What is the **smaller** share?

- 7 Share **60** in the ratio **1 : 5**. What is the **larger** share?

- 8 Share **60** in the ratio **1 : 5**. What is the **smaller** share?

- 9 Share **48** in the ratio **5 : 7**. What is the **larger** share?

- 10 Share **48** in the ratio **5 : 7**. What is the **smaller** share?

- 11 Share **30** in the ratio **2 : 3**. What is the **larger** share?

- 12 Share **30** in the ratio **2 : 3**. What is the **smaller** share?

- 13 Share **56** in the ratio **3 : 4**. What is the **larger** share?
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- 14 Share **56** in the ratio **3 : 4**. What is the **smaller** share?
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- 15 Share **45** in the ratio **4 : 5**. What is the **larger** share?
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- 16 Share **45** in the ratio **4 : 5**. What is the **smaller** share?
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- 17 Share **24** in the ratio **1 : 2**. What is the **larger** share?
-
- 18 Share **24** in the ratio **1 : 2**. What is the **smaller** share?
-
- 19 Share **72** in the ratio **5 : 7**. What is the **larger** share?
-
- 20 Share **72** in the ratio **5 : 7**. What is the **smaller** share?
-
- 21 Share **35** in the ratio **2 : 5**. What is the **larger** share?
-
- 22 Share **35** in the ratio **2 : 5**. What is the **smaller** share?
-
- 23 Share **63** in the ratio **2 : 7**. What is the **larger** share?
-
- 24 Share **63** in the ratio **2 : 7**. What is the **smaller** share?
-
- 25 Share **60** in the ratio **1 : 2 : 3**. What is the largest share?
-
- 26 Share **90** in the ratio **2 : 3 : 4**. What is the largest share?
-
- 27 Share **120** in the ratio **1 : 3 : 4**. What is the largest share?
-
- 28 Share **100** in the ratio **1 : 4 : 5**. What is the largest share?
-
- 29 Share **84** in the ratio **2 : 4 : 6**. What is the largest share?
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B · Reasoning — The method, and how to check it.

- 30 What is the first step when sharing in a ratio?
- ☐ Divide by the first number
 - ☐ Add the parts to find how many there are altogether
 - ☐ Multiply the parts
 - ☐ Subtract the parts
- 31 You share 20 in the ratio 2 : 3. What is one part worth?
- ☐ 2
 - ☐ 3
 - ☐ 4
 - ☐ 10

- 32** How can you check a share is right?
- ☐ You cannot
 - ☐ Add the shares and see whether they give the total
 - ☐ Divide them
 - ☐ Compare with the ratio only
- 33** You share 20 in the ratio 2 : 3 and get 8 and 12. Which share belongs to the 3?
- ☐ 8
 - ☐ 12
 - ☐ Either
 - ☐ Neither
- 34** Can a total always be shared exactly in any ratio?
- ☐ Yes
 - ☐ No
- 35** Two people share money in the ratio 1 : 1. What does that mean?
- ☐ One gets it all
 - ☐ They share it equally
 - ☐ One gets twice as much
 - ☐ It cannot be done
- 36** Sharing 60 in the ratio 1 : 2 : 3, how many parts are there?
- ☐ 3
 - ☐ 6
 - ☐ 60
 - ☐ 10

C · Challenge — Working backwards from a share.

- 37** Share \$150 in the ratio 2 : 3 : 5. What is the largest share, in dollars?
- _____
- 38** Two people share money in the ratio 3 : 5. The smaller share is \$27. What is the total, in dollars?
- _____
- 39** Two people share money in the ratio 4 : 7. The larger share is \$91. What is the smaller share, in dollars?
- _____
- 40** Two shares are in the ratio 5 : 3 and differ by 16. What is the larger share?
- _____
- 41** A sum is shared 1 : 2 : 4. The smallest share is 12. What is the total?
- _____

D · Word problems — Money, mixtures and time.

- 42** Two friends share \$45 in the ratio 4 : 5. How much does the second get, in dollars?
- _____

- 43** A 60 cm ribbon is cut in the ratio 1 : 3. How long is the longer piece, in cm?

- 44** Concrete mixes cement, sand and gravel 1 : 2 : 3. In 60 kg, how much gravel, in kg?

- 45** A class of 30 has boys and girls in the ratio 2 : 3. How many girls?

- 46** A day's 24 hours is split work : rest in the ratio 1 : 2. How many hours of rest?

- 47** Prize money of \$120 is split 1 : 2 : 3. What does the winner get, in dollars?

- 48** A 90 minute lesson is split reading : writing in the ratio 4 : 5. How many minutes of writing?

- 49** Two shops share 84 boxes in the ratio 3 : 4. How many does the first get?
