

Tables of Equivalent Ratios

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

Equivalent ratios are ratios that name the same comparison, like $2 : 5$, $4 : 10$, and $6 : 15$. You can build them by **multiplying both parts by the same number** (or dividing both by the same number). A **ratio table** lines up equivalent ratios in rows or columns so you can spot patterns and fill in missing values. To find a missing number, ask “what did the known part get multiplied by?” and do the same to the other part. Every column of the table keeps the ratio the same.

◇ **Example:** A ratio table for paint shows 2 cups blue to 5 cups white. Fill in the missing value: $2 : 5$, $4 : 10$, $6 : \square$.

⇒ Look at the pattern in the blue column: 2, then 4, then 6 — each step adds 2, and 6 is 2×3 . Whatever we multiply the blue part by, we must multiply the white part by the same number. The white part started at 5, so for the third column we compute $5 \times 3 = 15$. We can check: $6 : 15$ simplifies back to $2 : 5$ by dividing both by 3. So the missing value is 15.

Answer: 15

PRACTICE

Find the missing value in each pair of equivalent ratios.

- | | | | |
|----------------------------|-------|-----------------------------|-------|
| 1. $3 : 4 = 6 : \square$ | _____ | 11. $2 : 9 = \square : 45$ | _____ |
| 2. $2 : 7 = \square : 21$ | _____ | 12. $5 : 8 = 25 : \square$ | _____ |
| 3. $5 : 2 = 35 : \square$ | _____ | 13. $10 : 3 = \square : 12$ | _____ |
| 4. $1 : 6 = 4 : \square$ | _____ | 14. $4 : 11 = 16 : \square$ | _____ |
| 5. $8 : 3 = \square : 9$ | _____ | 15. $6 : 5 = \square : 25$ | _____ |
| 6. $4 : 5 = 12 : \square$ | _____ | 16. $12 : 7 = \square : 21$ | _____ |
| 7. $9 : 2 = \square : 8$ | _____ | 17. $8 : 9 = 32 : \square$ | _____ |
| 8. $6 : 7 = \square : 35$ | _____ | 18. $15 : 4 = \square : 16$ | _____ |
| 9. $3 : 10 = 9 : \square$ | _____ | 19. $20 : 6 = 10 : \square$ | _____ |
| 10. $7 : 4 = 28 : \square$ | _____ | 20. $18 : 24 = 3 : \square$ | _____ |

◆ Word Problems

21. A recipe uses 3 cups of flour for every 2 cups of sugar. Using a ratio table, how much sugar is needed for 12 cups of flour?

22. A class trip charges \$5 for every 2 students. Using a ratio table, how much does it cost for 14 students? _____
23. A printer uses 4 pages of paper for every 3 minutes. Using a ratio table, how many pages does it use in 15 minutes? _____
24. A fruit stand sells oranges at 6 for \$2. Using a ratio table, how many oranges can you buy for \$10? _____



Answer Keys

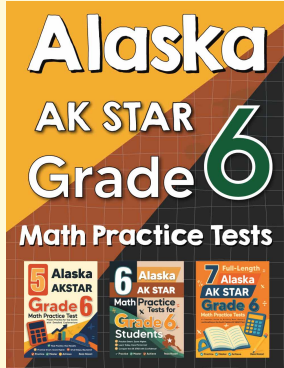
- | | |
|-------------------------------------|--|
| 1. <input type="text" value="8"/> | 13. <input type="text" value="40"/> |
| 2. <input type="text" value="6"/> | 14. <input type="text" value="44"/> |
| 3. <input type="text" value="14"/> | 15. <input type="text" value="30"/> |
| 4. <input type="text" value="24"/> | 16. <input type="text" value="36"/> |
| 5. <input type="text" value="24"/> | 17. <input type="text" value="36"/> |
| 6. <input type="text" value="15"/> | 18. <input type="text" value="60"/> |
| 7. <input type="text" value="36"/> | 19. <input type="text" value="3"/> |
| 8. <input type="text" value="30"/> | 20. <input type="text" value="4"/> |
| 9. <input type="text" value="30"/> | 21. <input type="text" value="8 cups of sugar"/> |
| 10. <input type="text" value="16"/> | 22. <input type="text" value="\$35"/> |
| 11. <input type="text" value="10"/> | 23. <input type="text" value="20 pages"/> |
| 12. <input type="text" value="40"/> | 24. <input type="text" value="30 oranges"/> |

Step-by-Step Explanations

- | | |
|--|---|
| <p>1. The first part doubled ($3 \rightarrow 6$), so double the second: $4 \rightarrow 8$.</p> <p>2. The second part tripled ($7 \rightarrow 21$), so triple the first: $2 \rightarrow 6$.</p> <p>3. The first part is $\times 7$ ($5 \rightarrow 35$), so $2 \times 7 = 14$.</p> <p>4. The first part is $\times 4$ ($1 \rightarrow 4$), so $6 \times 4 = 24$.</p> <p>5. The second part tripled ($3 \rightarrow 9$), so triple the first: $8 \rightarrow 24$.</p> <p>6. The first part tripled ($4 \rightarrow 12$), so $5 \times 3 = 15$.</p> <p>7. The second part is $\times 4$ ($2 \rightarrow 8$), so $9 \times 4 = 36$.</p> <p>8. The second part is $\times 5$ ($7 \rightarrow 35$), so $6 \times 5 = 30$.</p> <p>9. The first part tripled ($3 \rightarrow 9$), so $10 \times 3 = 30$.</p> <p>10. The first part is $\times 4$ ($7 \rightarrow 28$), so $4 \times 4 = 16$.</p> <p>11. The second part is $\times 5$ ($9 \rightarrow 45$), so $2 \times 5 = 10$.</p> <p>12. The first part is $\times 5$ ($5 \rightarrow 25$), so $8 \times 5 = 40$.</p> | <p>13. The second part is $\times 4$ ($3 \rightarrow 12$), so $10 \times 4 = 40$.</p> <p>14. The first part is $\times 4$ ($4 \rightarrow 16$), so $11 \times 4 = 44$.</p> <p>15. The second part is $\times 5$ ($5 \rightarrow 25$), so $6 \times 5 = 30$.</p> <p>16. The second part tripled ($7 \rightarrow 21$), so triple the first: $12 \rightarrow 36$.</p> <p>17. The first part is $\times 4$ ($8 \rightarrow 32$), so $9 \times 4 = 36$.</p> <p>18. The second part is $\times 4$ ($4 \rightarrow 16$), so $15 \times 4 = 60$.</p> <p>19. The first part is halved ($20 \rightarrow 10$), so halve the second: $6 \rightarrow 3$.</p> <p>20. The first part is $\div 6$ ($18 \rightarrow 3$), so $24 \div 6 = 4$.</p> <p>21. Flour goes from 3 to 12, which is $\times 4$. So sugar goes from $2 \times 4 = 8$ cups.</p> <p>22. Students go from 2 to 14, which is $\times 7$. So the cost goes from $\\$5 \times 7 = \\35.</p> <p>23. Minutes go from 3 to 15, which is $\times 5$. So pages go from $4 \times 5 = 20$.</p> <p>24. Dollars go from \$2 to \$10, which is $\times 5$. So oranges go from $6 \times 5 = 30$.</p> |
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