

LESSON
5-4 Practice A
Solving Proportions

Tell what each ratio is multiplied by to produce the equivalent ratio.

1. $\frac{6}{12} = \frac{18}{36}$

2. $\frac{2}{11} = \frac{22}{121}$

3. $\frac{1}{5} = \frac{6}{30}$

4. $\frac{6}{12} = \frac{9}{18}$

Tell whether the ratios are proportional.

5. $\frac{5}{20} \stackrel{?}{=} \frac{9}{32}$

6. $\frac{15}{20} \stackrel{?}{=} \frac{24}{36}$

7. $\frac{12}{36} \stackrel{?}{=} \frac{10}{30}$

8. $\frac{4}{8} \stackrel{?}{=} \frac{20}{40}$

9. $\frac{2}{7} \stackrel{?}{=} \frac{6}{21}$

10. $\frac{6}{10} \stackrel{?}{=} \frac{9}{15}$

11. $\frac{14}{27} \stackrel{?}{=} \frac{12}{23}$

12. $\frac{16}{22} \stackrel{?}{=} \frac{24}{33}$

Solve each proportion.

13. $\frac{\$d}{6 \text{ tickets}} = \frac{\$32}{8 \text{ tickets}}$

14. $\frac{s \text{ students}}{5 \text{ teachers}} = \frac{144 \text{ students}}{9 \text{ teachers}}$

15. $\frac{m \text{ miles}}{7 \text{ hours}} = \frac{200 \text{ miles}}{4 \text{ hours}}$

16. $\frac{\$d}{3 \text{ burritos}} = \frac{\$16}{8 \text{ burritos}}$

Use equivalent fractions to solve each proportion.

17. $\frac{c}{6} = \frac{6}{9}$

18. $\frac{a}{8} = \frac{9}{12}$

19. $\frac{b}{24} = \frac{10}{12}$

20. $\frac{w}{15} = \frac{4}{10}$

21. Sonia's class has 24 girls and 8 boys. Her school has a total enrollment of 860 students. If the school has the same ratio of girls to boys as Sonia's class, how many girls are in the school?

22. Greg bought 6 post cards for \$3.00. At this rate, how much would 10 post cards cost?

LESSON 5-3 Puzzles, Twisters & Teasers

5-3 Analyze This!

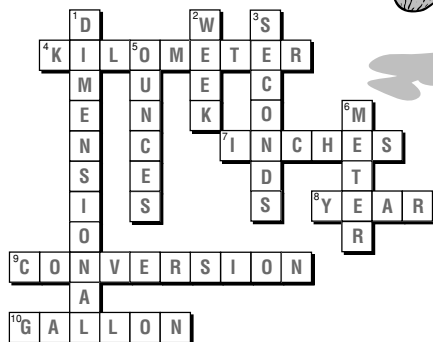
Solve the crossword puzzle.

Across

- There are 1000 meters in a ____.
- There are 12 ____ in 1 foot.
- There are 365 days in 1 ____.
- Ratios of equal quantities are called ____ factors.
- There are 4 quarts in 1 ____.

Down

- Unit analysis is also called ____ analysis.
- There are 7 days in 1 ____.
- There are 60 ____ in 1 minute.
- There are 16 ____ in 1 pound.
- There are 100 centimeters in 1 ____.



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27

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LESSON Practice A

5-4 Solving Proportions

Tell what each ratio is multiplied by to produce the equivalent ratio.

$$1. \frac{6}{12} = \frac{18}{36} \quad 2. \frac{2}{11} = \frac{22}{121} \quad 3. \frac{1}{5} = \frac{6}{30} \quad 4. \frac{6}{12} = \frac{9}{18}$$

$$\frac{3}{3} \quad \frac{11}{11} \quad \frac{6}{6} \quad \frac{1.5}{1.5}$$

Tell whether the ratios are proportional.

$$5. \frac{5}{20} \stackrel{?}{=} \frac{9}{32} \quad 6. \frac{15}{20} \stackrel{?}{=} \frac{24}{36} \quad 7. \frac{12}{36} \stackrel{?}{=} \frac{10}{30} \quad 8. \frac{4}{8} \stackrel{?}{=} \frac{20}{40}$$

$$\text{no} \quad \text{no} \quad \text{yes} \quad \text{yes}$$

$$9. \frac{2}{7} \stackrel{?}{=} \frac{6}{21} \quad 10. \frac{6}{10} \stackrel{?}{=} \frac{9}{15} \quad 11. \frac{14}{27} \stackrel{?}{=} \frac{12}{23} \quad 12. \frac{16}{22} \stackrel{?}{=} \frac{24}{33}$$

$$\text{yes} \quad \text{yes} \quad \text{no} \quad \text{yes}$$

Solve each proportion.

$$13. \frac{\$d}{6 \text{ tickets}} = \frac{\$32}{8 \text{ tickets}} \quad 14. \frac{s \text{ students}}{5 \text{ teachers}} = \frac{144 \text{ students}}{9 \text{ teachers}}$$

$$\underline{\$24} \quad \underline{80 \text{ students}}$$

$$15. \frac{m \text{ miles}}{7 \text{ hours}} = \frac{200 \text{ miles}}{4 \text{ hours}} \quad 16. \frac{\$d}{3 \text{ burritos}} = \frac{\$16}{8 \text{ burritos}}$$

$$\underline{350 \text{ mi}} \quad \underline{\$6}$$

Use equivalent fractions to solve each proportion.

$$17. \frac{c}{6} = \frac{6}{9} \quad 18. \frac{a}{8} = \frac{9}{12} \quad 19. \frac{b}{24} = \frac{10}{12} \quad 20. \frac{w}{15} = \frac{4}{10}$$

$$\underline{c = 4} \quad \underline{a = 6} \quad \underline{b = 20} \quad \underline{w = 6}$$

21. Sonia's class has 24 girls and 8 boys. Her school has a total enrollment of 860 students. If the school has the same ratio of girls to boys as Sonia's class, how many girls are in the school?

645 girls

22. Greg bought 6 post cards for \$3.00. At this rate, how much would 10 post cards cost?

\$5.00

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28

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LESSON Practice B

5-4 Solving Proportions

Tell whether the ratios are proportional.

$$1. \frac{3}{4} \stackrel{?}{=} \frac{9}{12} \quad 2. \frac{9}{24} \stackrel{?}{=} \frac{18}{48} \quad 3. \frac{16}{24} \stackrel{?}{=} \frac{10}{18} \quad 4. \frac{13}{25} \stackrel{?}{=} \frac{26}{50}$$

$$\text{yes} \quad \text{yes} \quad \text{no} \quad \text{yes}$$

$$5. \frac{10}{32} \stackrel{?}{=} \frac{16}{38} \quad 6. \frac{20}{36} \stackrel{?}{=} \frac{50}{90} \quad 7. \frac{20}{28} \stackrel{?}{=} \frac{28}{36} \quad 8. \frac{14}{42} \stackrel{?}{=} \frac{16}{36}$$

$$\text{no} \quad \text{yes} \quad \text{no} \quad \text{no}$$

Solve each proportion.

$$9. \frac{\$d}{3 \text{ CDs}} = \frac{\$64.75}{5 \text{ CDs}} \quad 10. \frac{c \text{ chairs}}{7 \text{ rows}} = \frac{252 \text{ chairs}}{9 \text{ rows}}$$

$$\underline{\$38.85} \quad \underline{196 \text{ chairs}}$$

$$11. \frac{m \text{ miles}}{5 \text{ hours}} = \frac{135 \text{ miles}}{3 \text{ hours}} \quad 12. \frac{\$d}{4 \text{ subs}} = \frac{\$45}{10 \text{ subs}}$$

$$\underline{225 \text{ mi}} \quad \underline{\$18}$$

Solve each proportional situation using equivalent fractions.

$$13. \frac{c}{15} = \frac{4}{10} \quad 14. \frac{a}{6} = \frac{8}{12} \quad 15. \frac{b}{20} = \frac{15}{12} \quad 16. \frac{w}{6} = \frac{15}{10}$$

$$\underline{c = 6} \quad \underline{a = 4} \quad \underline{b = 25} \quad \underline{w = 9}$$

17. Janessa bought 4 stamps for \$1.48. At this rate, how much would 10 stamps cost?

\$3.70

18. A karate team had 6 girls and 9 boys. Then 2 more girls and 3 more boys joined the team. Did the ratio of girls to boys stay the same? Explain.

Yes; $\frac{6}{9} = \frac{8}{12}$

19. A 30 kg weight is positioned 2 m from a fulcrum. At what distance from the fulcrum must a 40 kg weight be positioned to keep the scale balanced?

1.5 m

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29

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LESSON Practice C

5-4 Solving Proportions

Tell whether the ratios are proportional.

$$1. \frac{34}{85} \stackrel{?}{=} \frac{24}{75} \quad 2. \frac{19}{57} \stackrel{?}{=} \frac{29}{87} \quad 3. \frac{45}{18} \stackrel{?}{=} \frac{70}{28} \quad 4. \frac{99}{108} \stackrel{?}{=} \frac{33}{36}$$

$$\text{no} \quad \text{yes} \quad \text{yes} \quad \text{yes}$$

Solve each proportion.

$$5. \frac{\$d}{3 \text{ tickets}} = \frac{\$76}{8 \text{ tickets}} \quad 6. \frac{c \text{ chairs}}{9 \text{ rows}} = \frac{180 \text{ chairs}}{15 \text{ rows}} \quad 7. \frac{m \text{ miles}}{6 \text{ hours}} = \frac{468 \text{ miles}}{9 \text{ hours}}$$

$$\underline{\$28.50} \quad \underline{108 \text{ chairs}} \quad \underline{312 \text{ mi}}$$

Solve each proportional situation using equivalent fractions.

$$8. \frac{c}{20} = \frac{21}{30} \quad 9. \frac{a}{6} = \frac{24}{9} \quad 10. \frac{b}{25} = \frac{8}{10} \quad 11. \frac{w}{8} = \frac{15}{10}$$

$$\underline{c = 14} \quad \underline{a = 16} \quad \underline{b = 20} \quad \underline{w = 12}$$

For each set of ratios, find the two that are proportional.

$$12. \frac{15}{45}, \frac{17}{50}, \frac{24}{72} \quad 13. \frac{7}{18}, \frac{28}{60}, \frac{42}{90} \quad 14. \frac{25}{85}, \frac{20}{68}, \frac{4}{9}$$

$$\frac{15}{45} = \frac{24}{72} \quad \frac{7}{18} = \frac{28}{60} = \frac{42}{90} \quad \frac{25}{85} = \frac{20}{68}$$

$$15. \frac{51}{17}, \frac{64}{16}, \frac{81}{27} \quad 16. \frac{0.621}{0.18}, \frac{0.9315}{0.27}, \frac{1.424}{0.36} \quad 17. \frac{abc}{a}, \frac{-2abc}{-2}, \frac{9abc}{9a}$$

$$\frac{51}{17} = \frac{81}{27} \quad \frac{0.621}{0.18} = \frac{0.9315}{0.27} \quad \frac{abc}{a} = \frac{9abc}{9a}$$

18. On an average day, the cafeteria serves lunch to 530 students. $\frac{2}{5}$ of the students buy dessert. How many of the students did not buy dessert?

318

19. The track team had 14 girls and 18 boys. Then 6 more girls and 8 more boys joined the team. Did the ratio of girls to boys stay the same? Explain.

No; $\frac{14}{18} \neq \frac{20}{26}$

20. A 15 lb weight is positioned 10 in. from a fulcrum. At what distance from the fulcrum must a 12 lb weight be positioned to keep the scale balanced?

$12 \frac{1}{2}$ in.

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30

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