Name __*Key*__ Date __2018__

In Exercises 1 and 2, write a proportion to find how many strikes a bowler needs to get the given score.

1. 32 strike attempts; strike score of 75%

$$\frac{x}{32} = \frac{75}{100}$$

2. 80 strike attempts; strike score of 95%

$$\frac{x}{80} = \frac{95}{100}$$

3. Describe and correct the error in writing the proportion to the right. *heights are switched*

	Day 1	Day 2
Length	3.1	15.5
Height	h	45

$$\frac{15.5}{h} = \frac{3.1}{45}$$

4. There are 3 referees for every 16 players. Write a proportion that gives the number of referees r for 128 players.

$$\frac{3r}{16p} = \frac{xr}{128p}$$

Solve the proportion. Use ARROWS. Show your work.

5. $\dfrac{5}{12} = \dfrac{x\,(15)}{36}$ ×3

6. $\dfrac{20}{3.4} = \dfrac{800}{y\,(136)}$ ×40

7. $\dfrac{(21)\,t}{28} = \dfrac{3}{4}$ ×7

$\times9\left(\dfrac{1}{x\,(9)} = \dfrac{5}{45}\right)\times9$

8. $\dfrac{2}{3} = \dfrac{a\,(10)}{15}$ ×5

9. $\dfrac{4}{7} = \dfrac{44}{m\,(77)}$ ×11

10. $\dfrac{(9)\,d}{6} = \dfrac{72}{48}$ ÷8

$\dfrac{4}{7} = \dfrac{24}{a\,(42)}$ ×6

11. A recipe calls for $\dfrac{3}{4}$ cup of sugar and $\dfrac{1}{2}\,(2/4)$ cup of brown sugar. You are reducing the recipe. You will use $\dfrac{1}{6}$ cup of brown sugar. How much sugar will you use? *Both ingredients ÷ by 3.*

$\dfrac{1}{2} \xrightarrow{\div 3} \dfrac{1}{6}$

$\dfrac{3}{4} \xrightarrow{\div 3} \dfrac{1}{4}$ cup Sugar

13. There are 32 students in the school play. The ratio of girls to all students in the play is 5 : 8. How many girls are in the play?

$\dfrac{5g}{8\text{ total}} \xrightarrow{\times 4} \dfrac{20\text{ girls}}{32\text{ total}}$ **20 girls**

14. Two out of three vehicles in a parking lot are SUVs. There are 18 SUVs in the parking lot. How many vehicles are in the parking lot?

$\dfrac{2\text{ SUV}}{3\text{ total}} = \dfrac{18\text{ SUV}}{27\text{ total}}$ ×9   **27 total**

11. A paint color requires the ratio of green paint to yellow paint to be 4 : 9. A container of this paint has 36 pints of yellow paint. Write and solve a proportion that gives the number g of pints of green paint in the container.

$\dfrac{4g}{9y} = \dfrac{16g}{36y}$ ×4   **16 g**

. Give two possible pairs of values for p and q: $\dfrac{2}{5} = \dfrac{p}{q}$. $\dfrac{4}{10}$ $\dfrac{12}{15}$ ×2   ×3

multiply $\dfrac{2}{5}$ *by any #*

Simplify, divide, check cross products

Tell whether the ratios form a proportion.

1. $\frac{25}{16}, \frac{65}{56}$ NO

2. $\frac{30}{75}, \frac{24}{60}$ yes

3. $\frac{27}{48}, \frac{108}{192}$ yes

7. $\frac{28.5}{42}, \frac{19}{28}$ yes

8. $\frac{3.5}{4}, \frac{11.9}{13.6}$ yes

9. $\frac{124}{98}, \frac{315}{225}$ NO.

Tell whether the two rates form a proportion.

4. $24 for 16 burgers; $15 for 10 burgers $24/16 = 15/10$ yes

5. 10 used books for $4.50; 15 used books for $6.00   NO

6. 125 horsepower motor for an 18-foot boat; 225 horsepower motor for a 32-foot boat   NO.

10. The seventh-grade band has 15 drummers and 12 trumpet players. The eighth-grade band has 10 drummers and 8 trumpet players. Do the ratios form a proportion? Explain. Both ratios = $\left(\frac{5}{4}\right)\frac{D}{T}$ $\frac{15}{12} = \frac{10}{8}$ yes.

12. A wholesale warehouse buys pairs of sandals to sell.

   a. The warehouse can purchase 5 pairs of sandals for $65. What is the cost rate? $\frac{\$65}{5} = \$13/pair$

   b. The warehouse can purchase 8 pairs of sandals for $96. What is the cost rate? $\frac{\$96}{8}$ $\frac{\$12}{PR}$

   d. Are any of the cost rates proportional? Explain.

   NO, different $ per pair of shoes.   Cheaper!

Find the value of x so that the ratios form a proportion.

10. 8 feet in 15 seconds; 24 feet in x seconds   x = 45

11. 28 people in 4 rooms; 63 people in x rooms   x = 9

12. 14 girls to 6 boys; x girls to 15 boys   x = 35   Simplify First
   7 to 3

13. 45 marbles in 9 bags; x marbles in 36 bags   x = 180

18. You get $27 to spend at the mall for doing 6 chores. Your friend gets $36 for doing 8 chores.   a. What is your pay rate?   b. What is your friend's rate? $36/8ch = $4.50

   c. Are the pay rates equivalent? Explain. $27/6ch = $4.50

   Yes, Both rates are equal → PROPORTIONAL.

19. You can buy 4 tickets for $75 or 5 tickets for $94. Are the costs proportional? If not, rewrite one of the rates so the costs are proportional.

   NO $\frac{\$75}{4t} = \$18.75$ $\frac{\$94}{5t} = \$18.80$ ·$93.75 for 5 would work

20. A recipe requires a ratio of 4 potatoes to 6 carrots. You accidentally use 5 potatoes with 6 carrots. What is the least number of potatoes and carrots that you can add to get the correct ratio of potatoes to carrots?

   $\frac{2}{3}$ $\frac{4P}{6C} \rightarrow \frac{5P}{6C} \rightarrow \frac{6P}{9C}$ So Add 1 potatoE and 3 carrots.