


## 5.3 Exercises

FOR  
EXTRA  
HELP


 Addison-Wesley  
Math Tutor Center

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Write each proportion. See Example 1.

- \$9 is to 12 cans as \$18 is to 24 cans.
- 28 people is to 7 cars as 16 people is to 4 cars.
- 200 adults is to 450 children as 4 adults is to 9 children.
- 150 trees is to 1 acre as 1500 trees is to 10 acres.
- 120 ft is to 150 ft as 8 ft is to 10 ft.
- \$6 is to \$9 as \$10 is to \$15.

Determine whether each proportion is true or false by writing the ratios in lowest terms. Show the reduced ratios and then write true or false. See Example 2.

7.  $\frac{6}{10} = \frac{3}{5}$

8.  $\frac{1}{4} = \frac{9}{36}$

9.  $\frac{5}{8} = \frac{25}{40}$

10.  $\frac{2}{3} = \frac{20}{27}$

11.  $\frac{150}{200} = \frac{200}{300}$

12.  $\frac{100}{120} = \frac{75}{100}$

13.  $\frac{42}{15} = \frac{28}{10}$

14.  $\frac{18}{16} = \frac{36}{32}$

15.  $\frac{32}{18} = \frac{48}{27}$

16.  $\frac{15}{48} = \frac{10}{24}$

17.  $\frac{7}{6} = \frac{54}{48}$

18.  $\frac{28}{21} = \frac{44}{33}$

Use cross products to determine whether each proportion is true or false. Show the cross products and circle true or false. See Example 3.

19.  $\frac{2}{9} = \frac{6}{27}$

True      False

20.  $\frac{20}{25} = \frac{4}{5}$

True      False

21.  $\frac{20}{28} = \frac{12}{16}$

True      False

22.  $\frac{16}{40} = \frac{22}{55}$

True False

23.  $\frac{110}{18} = \frac{160}{27}$

True False

24.  $\frac{600}{420} = \frac{20}{14}$

True False

25.  $\frac{3.5}{4} = \frac{7}{8}$

True False

26.  $\frac{36}{23} = \frac{9}{5.75}$

True False

27.  $\frac{18}{16} = \frac{2.8}{2.5}$

True False

28.  $\frac{0.26}{0.39} = \frac{1.3}{1.9}$

True False

29.  $\frac{6}{3\frac{2}{3}} = \frac{18}{11}$

True False

30.  $\frac{16}{13} = \frac{2}{1\frac{5}{8}}$

True False

31.  $\frac{2\frac{5}{8}}{3\frac{1}{4}} = \frac{21}{26}$

True False

32.  $\frac{28}{17} = \frac{9\frac{1}{3}}{5\frac{2}{3}}$

True False

33.  $\frac{\frac{2}{3}}{2} = \frac{2.7}{8}$

True False

34.  $\frac{3.75}{1\frac{1}{4}} = \frac{7.5}{2\frac{1}{2}}$

True False

35.  $\frac{2\frac{3}{10}}{8.05} = \frac{1}{0.9}$

True False

36.  $\frac{\frac{3}{5}}{6} = \frac{1.5}{\frac{7}{12}}$

True False

37. Suppose Ichiro Suzuki of the Seattle Mariners had 16 hits in 50 times at bat and Sammy Sosa of the Chicago Cubs was at bat 400 times and got 128 hits. Paul is trying to convince Jamie that the two men hit equally well. Show how you could use a proportion and cross products to see whether Paul is correct.



38. Jay worked 3.5 hours and packed 91 cartons. Craig packed 126 cartons in 5.25 hours. To see whether the men worked equally fast, Barry set up this proportion:

$$\frac{3.5}{91} = \frac{126}{5.25}$$

Explain what is wrong with Barry's proportion and write a correct one. Is the correct proportion true or false?