

Study Guide Test 8 Ratios and Proportions

Write a ratio in 3 different forms for each situation. Express in simplest form.

1) 7 tickets sold to 21 tickets sold.

2) 3 dimes to 4 nickels

3) 4 days out of 6 weeks

4) 8 workers in $2\frac{1}{2}$ days.

Find 2 rates equal to each given rate.

5) 18 points for 12 people

6) 15 miles in 24 minutes

7) 9 yards for 4 designs

Find the unit rate.

8) 192 fl oz in 6 cartons

9) 540 straws in 15 boxes

10) \$22.95 for 15 pounds

11) 73.5 miles in 24.5 minutes

12) 73.5 miles in 24.5 minutes

13) \$6.48 for 18 ounces

14) 6 pounds in 4 cartons

State if each pair of ratios forms a proportion.

15) $\frac{4}{2}$ and $\frac{8}{4}$

16) $\frac{4}{6}$ and $\frac{2}{3}$

17) $\frac{6}{8}$ and $\frac{3}{4}$

18) $\frac{12}{16}$ and $\frac{3}{4}$

19) $\frac{4}{3}$ and $\frac{8}{6}$

20) $\frac{8}{12}$ and $\frac{2}{3}$

21) $\frac{4}{9}$ and $\frac{2}{3}$

22) $\frac{4}{3}$ and $\frac{16}{18}$

23) $\frac{3}{2}$ and $\frac{9}{8}$

24) $\frac{10}{12}$ and $\frac{2}{3}$

Solve each proportion.

25) $\frac{8}{10} = \frac{r}{9}$

26) $\frac{x}{3} = \frac{5}{6}$

27) $\frac{8}{6} = \frac{6}{b}$

28) $\frac{7}{5} = \frac{v}{10}$

29) $\frac{2}{10} = \frac{6}{n}$

30) $\frac{2}{5} = \frac{x}{6}$

31) $\frac{5}{x} = \frac{2}{10}$

32) $\frac{a}{6} = \frac{7}{5}$

33) $\frac{2}{k} = \frac{3}{6}$

34) $\frac{9}{6} = \frac{p}{7}$

35) $\frac{3}{x} = \frac{2}{5}$

36) $\frac{n}{10} = \frac{7}{4}$

37) $\frac{m}{5} = \frac{3}{4}$

38) $\frac{8}{4} = \frac{r}{9}$

39) $\frac{x}{4} = \frac{4}{2}$

40) $\frac{9}{8n} = \frac{3}{9}$

$$41) \frac{3}{4} = \frac{5}{b}$$

$$43) \frac{5}{3} = \frac{4}{x}$$

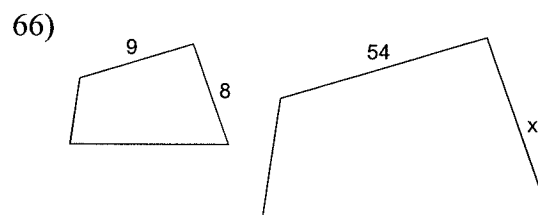
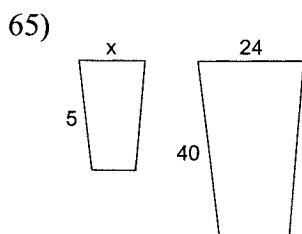
$$42) \frac{8}{v} = \frac{7}{8}$$

$$44) \frac{a}{4} = \frac{5}{7}$$

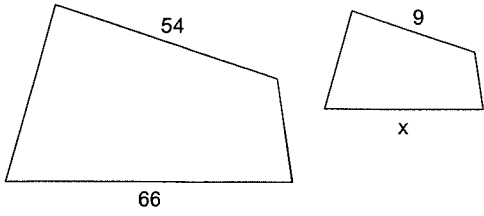
Answer each question and round your answer to the nearest whole number.

- 45) A rectangle is 12 in tall and 9 in wide. If it is reduced to a width of 3 in then how tall will it be?
- 47) The money used in Argentina is called the Peso. The exchange rate is 3 Pesos = \$1. Find how many dollars you would receive if you exchanged 9 Pesos.
- 49) Mark bought one tub of dried blueberries for \$8. How many tubs of dried blueberries can Dan buy if he has \$16?
- 51) DeShawn bought one container of dried cherries for \$7. How many containers can Nicole buy if she has \$21?
- 53) A rectangle is 1 in wide and 2 in tall. If it is enlarged to a height of 4 in then how wide will it be?
- 55) A rectangle is 4 in tall and 2 in wide. If it is enlarged to a height of 8 in then how wide will it be?
- 57) The currency in Bolivia is the Boliviano. The exchange rate is approximately \$1 to 8 Bolivianos. At this rate, how many dollars would you get if you exchanged 24 Bolivianos?
- 59) Mei took a trip to Sweden. Upon leaving she decided to convert all of her Kronor back into dollars. How many dollars did she receive if she exchanged 21 Kronor at a rate of 7 Kronor for \$1?
- 61) If you can buy one bunch of fennel for \$2 then how many can you buy with \$14?
- 63) One bunch of seedless black grapes costs \$2. How many bunches of seedless black grapes can you buy for \$8?
- 46) The currency in Tonga is the Pa'anga. The exchange rate is approximately \$1 = 2 Pa'anga. At this rate, how many Pa'anga would you get if you exchanged \$6?
- 48) The money used in China is called the Yuan. The exchange rate is \$1 to 8 Yuan. Find how many Yuan you would receive if you exchanged \$3.
- 50) One bunch of asparagus costs \$2. How many bunches can you buy for \$6?
- 52) Eugene bought one fruit platter for \$20. How many fruit platters can Kayla buy if she has \$40?
- 54) A painting is 6 in wide and 2 in tall. If it is reduced to a height of 1 in then how wide will it be?
- 56) A rectangle is 4 in wide and 1 in tall. If it is enlarged to a width of 20 in then how tall will it be?
- 58) The money used in the United Arab Emirates is called the Dirham. The exchange rate is \$1 for 4 Dirhams. Find how many Dirhams you would receive if you exchanged \$3.
- 60) Ted took a trip to Bolivia. Upon leaving he decided to convert all of his Bolivianos back into dollars. How many dollars did he receive if he exchanged 16 Bolivianos at a rate of 8 Bolivianos = \$1?
- 62) Kayla bought one star fruit for \$2. How many star fruit can Adam buy if he has \$16?
- 64) A rectangle is 1 in tall and 2 in wide. If it is enlarged to a width of 12 in then how tall will it be?

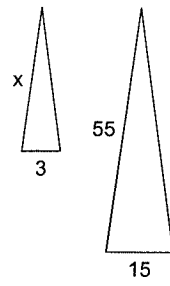
Each pair of figures is similar. Find the missing side.



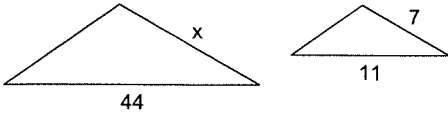
67)



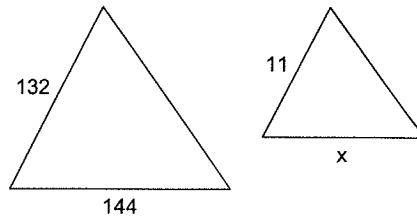
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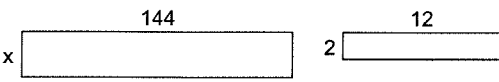
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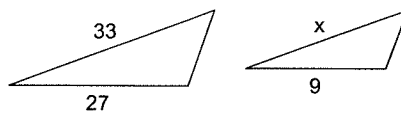
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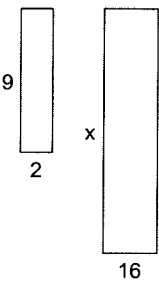
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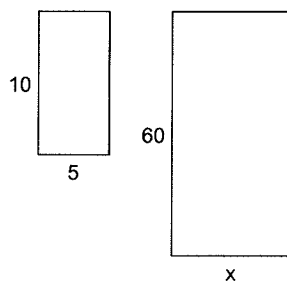
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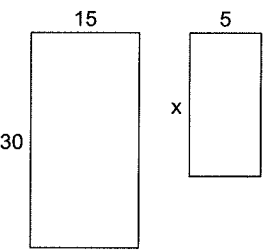
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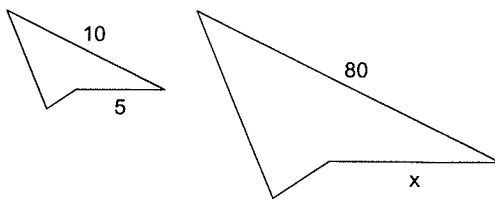
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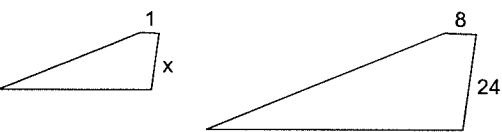
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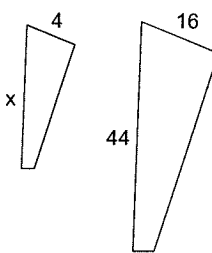
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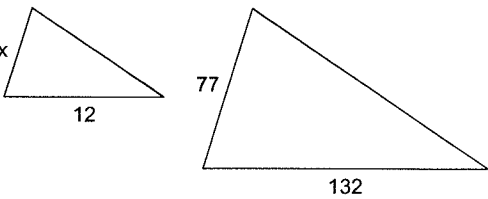
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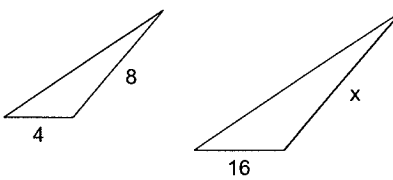
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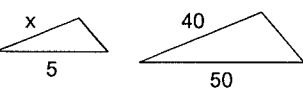
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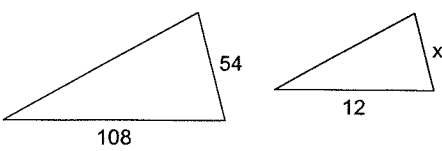
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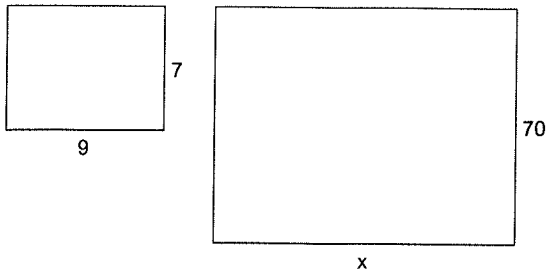
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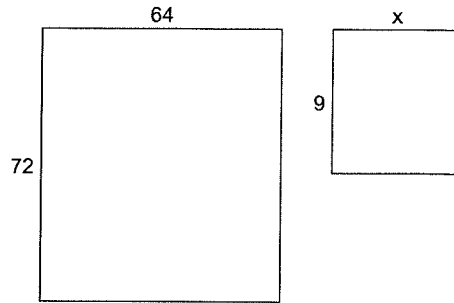
82)



83)



84)



Answer each question and round your answer to the nearest whole number.

- 85) A 15 ft tall ladder standing next to a man casts a 20 ft shadow. If the man casts a shadow that is 8 ft long then how tall is he?
- 87) A map has a scale of 3 cm : 6 km. If Rockville and Midway are 9 cm apart on the map then how far apart are the real cities?
- 89) Find the distance between Union and Sun Valley on a map with a scale of 1 in : 12 mi if they are actually 96 mi apart.
- 91) A model train is 12 in tall. If it was built with a scale of 4 in : 7 ft then how tall is the real train?
- 93) A particular train is 10 ft tall. A model of it was built with a scale of 5 in : 2 ft. How tall is the model?
- 95) A 9 ft tall tent standing next to a baby elephant casts a 15 ft shadow. If the baby elephant is 3 ft tall then how long is its shadow?
- 97) Centerville and Greenwood are 4 in apart on a map that has a scale of 2 in : 17 mi. How far apart are the real cities?
- 99) A map has a scale of 5 cm : 15 km. If Abbots Rise and Clinton are 30 km apart then they are how far apart on the map?
- 101) A map has a scale of 2 cm : 9 km. If Brisbane and Marion are 27 km apart then they are how far apart on the map?
- 103) A model motorcycle is 6 in long. If it was built with a scale of 2 in : 3 ft then how long is the real motorcycle?
- 86) A 12 ft tall statue standing next to an adult elephant casts a 6 ft shadow. If the adult elephant is 10 ft tall then how long is its shadow?
- 88) Salem and Union are 6 cm apart on a map that has a scale of 2 cm : 13 km. How far apart are the real cities?
- 90) Find the distance between Victoria and Centerville on a map with a scale of 1 cm : 12 km if they are actually 108 km apart.
- 92) A model submarine has a scale of 1 cm : 5 m. If the model submarine is 4 cm long then how long is the real submarine?
- 94) A model statue has a scale of 5 in : 3 ft. If the model statue is 30 in tall then how tall is the real statue?
- 96) A baby giraffe that is 6 ft tall casts a shadow that is 9 ft long. Find the length of the shadow that a 10 ft adult elephant casts.
- 98) A 9 ft tall adult elephant standing next to an adult giraffe casts a 12 ft shadow. If the adult giraffe is 15 ft tall then how long is its shadow?
- 100) Find the distance between Milton and Rivertown on a map with a scale of 2 cm : 5 km if they are actually 10 km apart.
- 102) A particular plane is 12 m tall. A model of it was built with a scale of 1 cm : 4 m. How tall is the model?
- 104) A model satellite is 16 cm wide. If it was built with a scale of 4 cm : 3 m then how wide is the real satellite?

Convert the following measures.

- 105) 71,171 yards = _____ feet
- 107) 1,120 pounds = _____ ounces
- 109) 10,000 mL = _____ L
- 111) 8 tons = _____ pounds
- 106) 4,812 inches = _____ feet
- 108) 144 ounces = _____ pounds
- 110) 80 mm = _____ cm
- 112) 90 km = _____ mm

Answers to Study Guide Test 8 Ratios and Proportions

- 1) $\frac{1}{3}$; 1 to 3; 1:3 2) $\frac{3}{4}$; 3 to 4; 3:4 3) $\frac{2}{3}$; 2 to 3; 2:3 4) $\frac{16}{5}$; 16 to 5; 16:5
- 5) Possible choices: $\frac{3}{2}, \frac{6}{4}, \frac{36}{24}$ 6) Possible choices: $\frac{5}{8}, \frac{30}{48}, \frac{45}{72}$ 7) Possible choices: $\frac{18}{8}, \frac{36}{16}, \frac{45}{20}$
- 8) 32 fl oz per carton 9) 36 straws per box 10) \$1.53 per pound 11) 3 miles per minute
- 12) 3 miles per minute 13) \$0.36 per oz. 14) $1\frac{1}{2}$ pounds per carton
- 15) Yes it is a proportion 16) Yes it is a proportion 17) Yes it is a proportion 18) Yes it is a proportion
- 19) Yes it is a proportion 20) Yes it is a proportion 21) No it is not a proportion
- 22) No it is not a proportion 23) No it is not a proportion 24) No it is not a proportion
- 25) $\left\{\frac{36}{5}\right\}$ 26) $\left\{\frac{5}{2}\right\}$ 27) $\left\{\frac{9}{2}\right\}$ 28) $\{14\}$
- 29) $\{30\}$ 30) $\left\{\frac{12}{5}\right\}$ 31) $\{25\}$ 32) $\left\{\frac{42}{5}\right\}$
- 33) $\{4\}$ 34) $\left\{\frac{21}{2}\right\}$ 35) $\left\{\frac{15}{2}\right\}$ 36) $\left\{\frac{35}{2}\right\}$
- 37) $\left\{\frac{15}{4}\right\}$ 38) $\{18\}$ 39) $\{8\}$ 40) $\left\{\frac{27}{8}\right\}$
- 41) $\left\{\frac{20}{3}\right\}$ 42) $\left\{\frac{64}{7}\right\}$ 43) $\left\{\frac{12}{5}\right\}$ 44) $\left\{\frac{20}{7}\right\}$
- 45) 4 in 46) 12 Pa'anga 47) \$3 48) 24 Yuan
- 49) 2 tubs of dried blueberries 50) 3 bunches of asparagus 51) 3 containers of dried cherries
- 52) 2 fruit platters 53) 2 in 54) 3 in 55) 4 in
- 56) 5 in 57) \$3 58) 12 Dirhams 59) \$3
- 60) \$2 61) 7 bunches of fennel 62) 8 star fruits
- 63) 4 bunches of seedless black grapes 64) 6 in 65) 3
- 66) 48 67) 11 68) 11 69) 28
- 70) 12 71) 24 72) 11 73) 72
- 74) 30 75) 10 76) 40 77) 3
- 78) 11 79) 7 80) 32 81) 4
- 82) 6 83) 90 84) 8 85) 6 ft
- 86) 5 ft 87) 18 km 88) 39 km 89) 8 in
- 90) 9 cm 91) 21 ft 92) 20 m 93) 25 in
- 94) 18 ft 95) 5 ft 96) 15 ft 97) 34 mi
- 98) 20 ft 99) 10 cm 100) 4 cm 101) 6 cm
- 102) 3 cm 103) 9 ft 104) 12 m 105) 213,513 feet
- 106) 401 feet 107) 17,920 ounces 108) 9 pounds 109) 10 L
- 110) 8 cm 111) 16,000 pounds 112) 90,000,000 mm