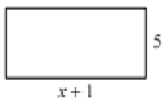


Pre-Algebra Mastery Test #6 Review Semester 1 2015 Final

Find the value of x for the figure.

1 Perimeter = 30



- 2** A teacher has 20 notebooks, 50 erasers, and 100 pencils. He wants to divide them so that each portion has an equal number of notebooks, an equal number of erasers, and an equal number of pencils. What is the maximum number of portions he can make?

Find the least common multiple of the monomials.

3 $12mn, 20m^4$

Write the expression using only positive exponents.

4 $-20x^5y^{-2}$

Write the number in scientific notation.

5 0.0000229

Find the product. Write your answer in scientific notation.

6 $(2.3 \times 10^{-3}) \times (1.1 \times 10^{-4})$

- 7** An observatory has been tracking a comet for a distance of 7.025×10^9 kilometers. Which of the following is equal to that distance?

Write the decimal as a fraction or mixed number.

8 $4.\overline{83}$

Simplify the expression.

9 $-\frac{9b}{26} - \frac{15b}{26}$

Find the sum or difference.

10 $11\frac{1}{8} - 2\frac{1}{9}$

Find the product.

11 $\frac{1}{6} \cdot 5\frac{1}{8}$

- 12** Jennifer owns $\frac{7}{8}$ of the mineral rights on a piece of property. She wants to divide these rights equally among 3 children. What fractional part of the mineral rights will each child get?

Solve the equation. Check your solution.

13 $50 = \frac{5}{2}x$

14 $-\frac{1}{3}y + 45 = 51$

Which shows the ratio as a fraction in simplest form?

15 4 to 56

16 $\frac{30}{36}$

Which of the following shows the ratios ordered from least to greatest?

17 $9 : 7$, 11 to 9 , $\frac{12}{10}$, $10 : 8$

Name: _____

ID: A

Find the unit rate.

18 $\frac{\$720}{10 \text{ nights}}$

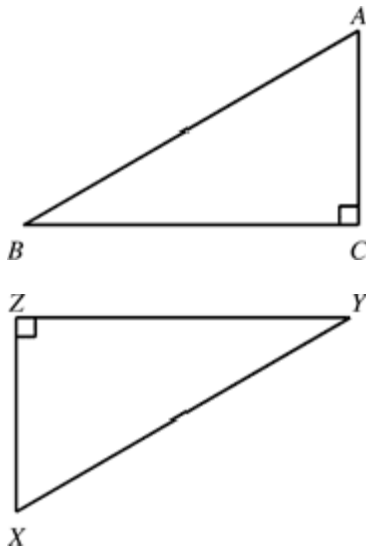
Solve the proportion.

19 $\frac{3}{7} = \frac{f}{28}$

Solve the proportion.

20 $\frac{7.2}{n} = \frac{9}{8.8}$

21 If $\triangle ABC \cong \triangle XYZ$, which of the following is true?

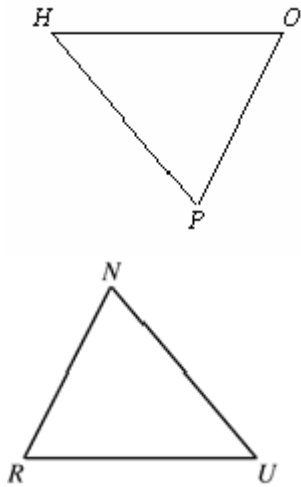


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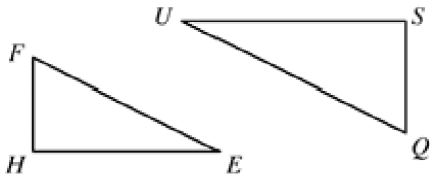
ID: A

Name the corresponding sides and the corresponding angles.

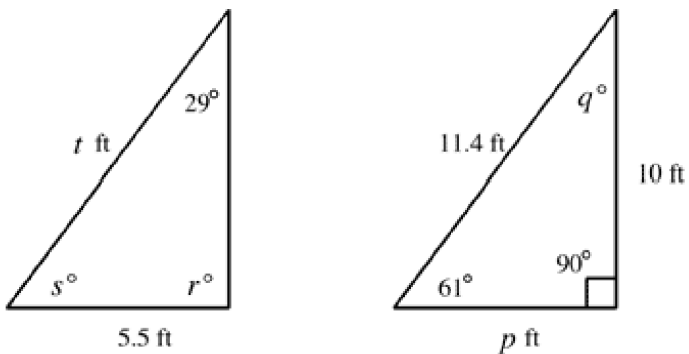
22 $\triangle RUN \cong \triangle OHP$



23 $\triangle FHE \sim \triangle QSU$



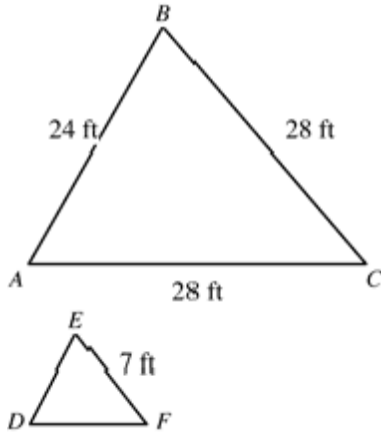
24 The two triangles are congruent. Find the missing side lengths and angle measures. (The figures may not be drawn to scale.)



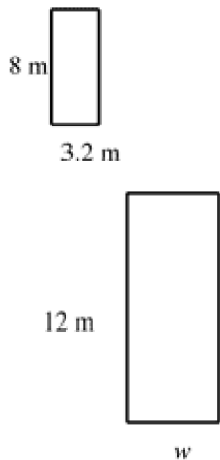
25 If two polygons are SIMILAR, then the corresponding angles must be _____.

26 If two polygons are SIMILAR, then the corresponding sides must be _____.

27 Triangle ABC is similar to triangle DEF . Find the length of side \overline{DE} . (The figures may not be drawn to scale.)



28 The two rectangles are similar. Find the width of the larger rectangle. (The figures may not be drawn to scale.)

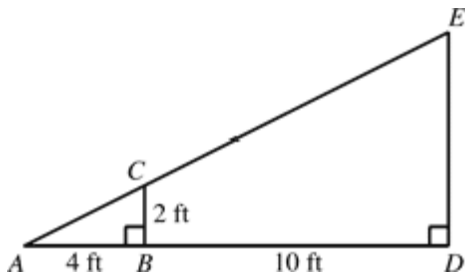


- 29** The smaller box is 2 feet tall and casts a shadow of 8 feet. The larger box is 4 feet tall. (The figures may not be drawn to scale.)

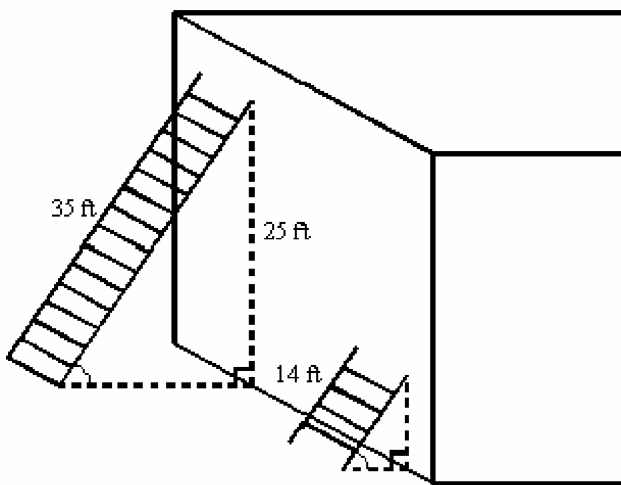


How long of a shadow does the larger box cast?

- 30** The extendable ramp shown below is used to move crates of fruit to loading docks of different heights. $\triangle ABC$ and $\triangle ADE$ are similar. When the horizontal distance AB is 4 feet, the height of the loading dock, BC , is 2 feet. Which is the height of the loading dock, DE ?

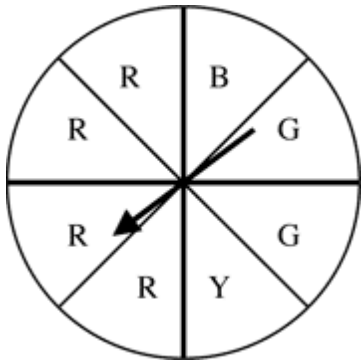


- 31** Two ladders are leaning against a wall at the same angle as shown.

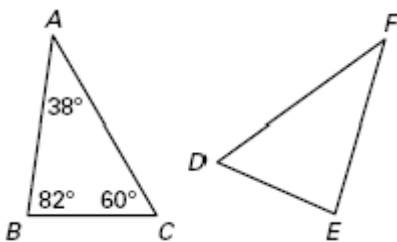


How far up the wall does the shorter ladder reach?

- 32** A jar contains 10 blue marbles, 4 red marbles, and 8 white marbles. What are the odds of drawing a blue marble from the bag?
- 33** A spinner has five equal portions colored orange, red, blue, yellow, and green. What are the odds against spinning a red or an orange?
- 34** If you spin the spinner, what is the probability of landing on R?



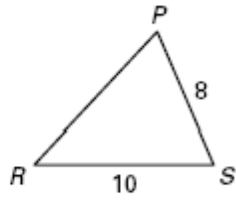
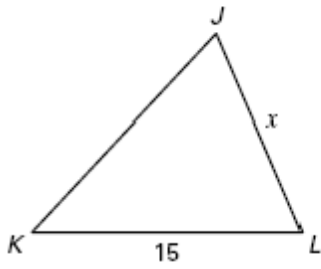
- 35** A number cube with the numbers 1 through 6 is rolled. Find the probability of rolling the number 4.
- 36** Use a tree diagram to find the number of choices that are possible if you choose one of 4 dressers, one of 5 kinds of wood, and one of 4 colors.
- 37** A teacher bought museum tickets for 20 students. The total cost of the tickets was \$80. What was the cost per student?
- 38** An insect is traveling at a rate of 40 cm per minute. About how many inches per minute does it travel?
- 39** If you can buy 5 pounds of pasta for \$8, how many pounds of pasta can you buy for \$20?
- 40** Given $\triangle ABC \cong \triangle DEF$, what is the measure of $\angle F$?



Name: _____

ID: A

- 41 Given $\triangle JKL \sim \triangle PRS$, find the length of \overline{JL} .



**Pre-Algebra Mastery Test #6 Review Semester 1 2015 Final
Answer Section**

- 1** 9
2 10
3 $60m^4n$
4 $\frac{-20x^5}{y^2}$
5 2.29×10^{-5}
6 2.53×10^{-7}
7 7,025,000,000 km
8 $4\frac{5}{6}$
9 $-\frac{12b}{13}$
10 $9\frac{1}{72}$
11 $\frac{41}{48}$
12 $\frac{7}{24}$ of the mineral rights
13 20
14 -18
15 $\frac{1}{14}$
16 $\frac{5}{6}$
17 $\frac{12}{10}$, 11 to 9, 10 : 8, 9 : 7
18 $\frac{\$72}{1 \text{ night}}$
19 12
20 $n = 20$
21 $\overline{AC} \cong \overline{XZ}$
22 corresponding sides: \overline{RU} and \overline{OH} , \overline{UN} and \overline{HP} , \overline{NR} and \overline{PO} ; corresponding angles: $\angle R$ and $\angle O$, $\angle U$ and $\angle H$, $\angle N$ and $\angle P$
23 corresponding sides: \overline{FH} and \overline{QS} , \overline{FE} and \overline{QU} , \overline{HE} and \overline{SU} ; corresponding angles: $\angle F$ and $\angle Q$, $\angle H$ and $\angle S$, $\angle E$ and $\angle U$
24 $p = 5.5$; $q = 29$; $r = 90$; $s = 61$; $t = 11.4$
25 congruent
26 proportional

- 27** 6 ft
- 28** 4.8 m
- 29** 16 ft
- 30** 7 ft
- 31** 10 ft
- 32** $\frac{5}{6}$
- 33** $\frac{3}{2}$
- 34** $\frac{1}{2}$
- 35** $\frac{1}{6}$
- 36** 80 choices
- 37** \$4 per student
- 38** 16 inches per minute
- 39** 12.5 pounds
- 40** 60°
- 41** 12