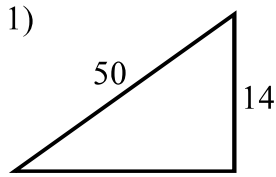


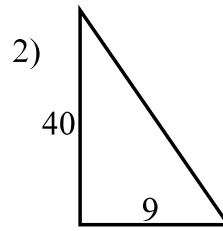
Geometry Review 1.2
Algebra 2

KEY

Use the Pythagorean Theorem to find the missing lengths. Put answers in simplest form.



$$\begin{aligned} a^2 + b^2 &= c^2 \\ 14^2 + b^2 &= 50^2 \\ 196 + b^2 &= 2500 \\ \underline{-196} \quad \underline{-196} & \\ b^2 &= \sqrt{2304} \\ b &= 48 \end{aligned}$$



3) $a = 15, b = 112, c = ?$

4) $a = 60, b = ?, c = 61$
 $b = 11$

5) $a = 6, b = 4, c = ?$
 $36 + 16 = c^2$
 $52 = c^2$
 $2\sqrt{13}$ or $7.2 = c$

6) $a = ?, b = 5, c = 11$

Use the information given in each problem below and the figure at the right to answer each question.

7) $d = 111$ mi. Find r .

$$r = \frac{111 \text{ mi.}}{2}$$

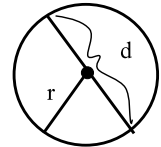
$$r = 55.5 \text{ mi.}$$

8) $r = 78$ mm. Find d .

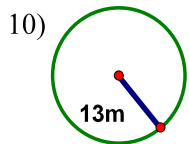
$$d = 78 \text{ mm (2)}$$

$$d = 156 \text{ mm}$$

9) $d = 63$ dm. Find r .



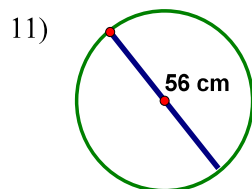
Find the circumference of each circle below in terms of pi and to the nearest tenth.



$$C = 2\pi r$$

$$C = 2\pi(13\text{m})$$

$$C = 26\pi\text{m} = 81.7\text{m}$$



$$C = 2\pi r$$

$$C = 56\pi\text{cm} = 175.9 \text{ cm}$$

12) $r = 19$ mm

13) $d = 10$ km

Given the circumference of a circle find the radius and diameter to the nearest tenth.

14) $c = 28\pi$ cm

$$d = \frac{28\pi\text{cm}}{\pi}$$

$$d = 28 \text{ cm}$$

$$r = 14\text{cm}$$

15) $c = 146\pi$ mm

16) $c = 72$ mi

$$d = \frac{72 \text{ mi}}{\pi}$$

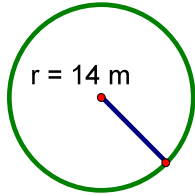
$$d = 22.9 \text{ mi}$$

$$r = 11.45 \text{ mi}$$

17) $c = 225$ m

Find the area of each circle below in terms of pi and to the nearest tenth.

18)

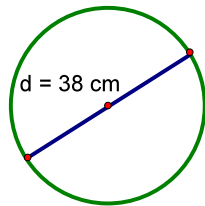


$$A = \pi r^2$$

$$A = \pi(14\text{m})^2$$

$$A = 196\pi\text{m}^2 = 615.8\text{m}^2$$

19)



20) $r = 9$ in

21) $d = 66$ mm
 $A = \pi r^2$
 $A = \pi(33\text{mm})^2$
 $A = 1089\pi\text{mm}^2$
 $A = 3421.2 \text{ mm}^2$

Use two different methods to show whether the following ratios are proportional or not.

22) $\frac{16}{20}$ and $\frac{48}{56}$

23) $\frac{14}{8}$ and $\frac{84}{48}$

24) $\frac{12}{7} = \frac{x}{42}$

25) $\frac{6}{15} = \frac{20}{t}$

(1) $\frac{4}{5} \neq \frac{6}{7}$ Not Proportional

(2) $16(56) = 20(48)$
 $896 \neq 960$ Not Proportional

$$15(20) = 6t$$

$$\frac{300}{6} = \frac{6t}{6}$$

$$50 = t$$

The ratio of youngsters taking tap compared to the number taking gymnastics at a local dance academy is 3 to 7.

26) If there are 49 young gymnasts enrolled, how many students are tap dancing?

$$\frac{3}{7} = \frac{x}{49} \quad 21 \text{ tap dancers}$$

27) 30 tap dancers enrolled for next year. If the ratios remain the same, how many gymnasts are enrolled?
 70 gymnasts

28) What is the smallest possible number of total gymnasts and tap dancers enrolled at the school?

Gymnasts and tap dancer are outnumbered by other students at the academy by a ratio of 4:3.

29) If there are 18 tap dancers at the school, how many students enrolled don't participate in gymnastics or tap?

$$\frac{4}{3} = \frac{x}{18} \quad 24 \text{ Students}$$

30) If there are 144 dancers of other disciplines enrolled at the academy, what is the total number of students enrolled?

31) Joe is 6 feet tall. He stands next to a large oak tree. He thinks to himself, "I wonder how tall this tree is?" He removes a handy tape measure from his knapsack and measures the tree's shadow. It is 120 feet long. With some help from a friend he finds that his own shadow measures 10 feet. Use a proportion to find the height of the tree.

$$\frac{6}{x} = \frac{10}{120}$$

$$6(120) = 10x$$

$$\frac{720}{10} = \frac{10x}{10}$$

$$72 = x$$

$$72 \text{ ft} = x$$

32) Bill and Stanley are young men of proportional strength. Bill, who weighs 140 lbs., dead lifts 250 lbs. If Stanley weighs 230 lbs., how much does he dead lift? If Stanley dead lifts 500 lbs., how much does he weigh? Use proportions to find your answer.