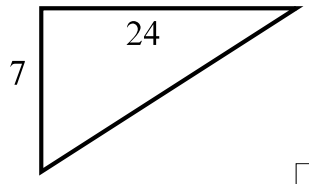
Geometry Review (KEY)
Algebra 2

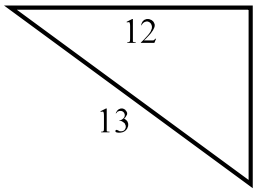
Use the Pythagorean Theorem to find the missing lengths. Put answers in simplest form.

1)



$7^2 + 24^2 = c^2$
$49 + 576 = c^2$
$625 = c^2$
$\sqrt{625} = \sqrt{c^2}$
$25 = c$

2)



3) a = 13, b = ?, c = 85

4) a = ?, b = 7, c = 9

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

6) a = 3, b = 5, c = ?

$a = \sqrt{32}$
$a = \sqrt{16 \cdot 2}$
$a = 4\sqrt{2}$

$b = \sqrt{96}$
$b = \sqrt{16 \cdot 6}$
$b = 4\sqrt{6}$

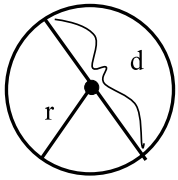
$c^2 = 34$
$c = \sqrt{34}$

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

7) r = 8 in. Find d.

8) r = 15 yds. Find d.

9) r = 32 m. Find d.



d = 8 in(2)
d = 16 in

10) d = 26 cm. Find r.

11) d = 14 ft. Find r.

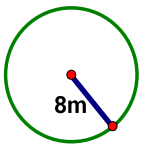
12) d = 49 km. Find r.

r = 26cm / 2
r = 13 cm

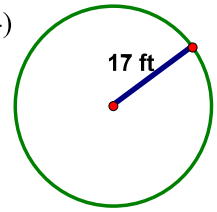
r = 24.5 km

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

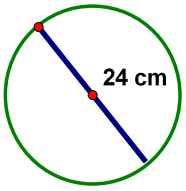
13)



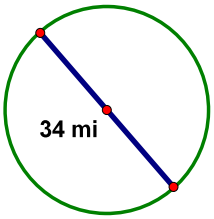
14)



15)



16)



C = 2πr
C = 2π(8m)
C = 16π m
C = 50.3 m

C = 2π(12cm)
C = 24π cm
C = 75.4 cm

17) r = 5 mm

18) r = 19 km

19) d = 46 ft

20) d = 13 in

C = 10π mm
C = 31.4 mm

C = 46π ft
C = 144.5 ft

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

21) c = 64π cm 22) c = 222π mm 23) c = 136 mi 24) c = 541 m

$c = d\pi$

$c = 2\pi r$, so $r = c/2\pi$

$r = \frac{64\pi cm}{2\pi} = 32cm$

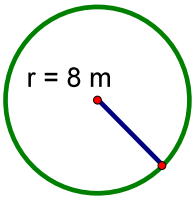
d = 64 cm

$r = \frac{136mi}{2\pi} = 21.6mi$

d = 43.2 mi

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

25)



$A = \pi r^2$

$A = \pi(8m)^2$

$A = 64\pi m^2$

$A = 201.1 m^2$

26) r = 5 in

27) r = 25 mm

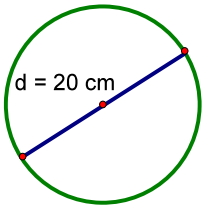
$A = \pi(25\ mm)^2$

$A = 625\pi\ mm^2$

$A = 1963.5\ mm^2$

28) r = 61 ft

29)



$A = \pi(10\ cm)^2$

$A = 100\pi\ cm^2$

$A = 314.2\ cm^2$

30) d = 12 yds

Use the table of information at the right to answer the following questions by giving a ratio in lowest terms.

31) Honda to Dodge?

= **48:84 = 4:7**

32) Toyota to Nissan?

33) Geo to Chevrolet?

34) Chevrolet to Ford?

= **65:72**

35) Mercedes to Toyota?

36) Ford to Honda?

A group of students counted the types of cars in the parking lot and found the following distribution:

Chevrolet:	65
Dodge:	84
Geo:	15
Ford:	72
Honda:	48
Mercedes:	3
Nissan:	30
Toyota:	42

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

37) $\frac{5}{3}$ and $\frac{15}{9}$; $\frac{5}{3} = \frac{15}{9}$? **38)** $\frac{12}{20}$ and $\frac{2}{5}$; $\frac{12}{20}$ and $\frac{2}{5}$? **39)** $\frac{51}{17}$ and $\frac{12}{4}$; $\frac{51}{17}$ and $\frac{12}{4}$ **40)** $\frac{27}{54}$ and $\frac{13}{26}$

$\frac{5}{3} = \frac{5}{3}$ $\quad 45 = 45$ $\quad \frac{3}{5} \neq \frac{2}{5}$ $\quad 60 \neq 40$

Yes, Proportional **NO!**

Solve each proportion for the missing value.

41) $\frac{8}{6} = \frac{x}{15}$; (8)(15) = 6x $\quad \frac{120}{6} = \frac{6x}{6}$

x = 20

42) $\frac{a}{4} = \frac{35}{20}$;

43) $\frac{12}{5} = \frac{72}{k}$; 12k = (5)(72) $\quad \frac{12k}{12} = \frac{360}{12}$

k = 30

44) $\frac{9}{v} = \frac{63}{42}$

In a university music class there are 3 brass musicians for every 5 that play the strings.

45) If there are 12 brass musicians in the class, how many musicians play the strings?

$\frac{3}{5} = \frac{12}{x}$ $\quad \frac{3x}{3} = \frac{60}{3}$

x = 20 string musicians

46) If there are 40 that play the strings, how many brass are there?

$\frac{3}{5} = \frac{x}{40}$ $\quad \frac{120}{5} = \frac{5x}{5}$

x = 24 brass musicians

47) What is the smallest possible number of total brass and string players in the class?

3 brass to 5 string. $\quad 3 + 5 =$ **8 brass and string musicians**

48) If the ratio of brass and string musicians in the class compared to all others is 5 to 7, and there are 35 brass and string musicians in class, how many students are enrolled in the class?

$\frac{5}{7} = \frac{35}{x}$

$\frac{5x}{5} = \frac{245}{5}$

x = 49 other musicians.

35 brass and string + 49 others = **84 students**

49) The ratio of brass to string is 3:5. The ratio of brass and string to all others is 2 to 3. If there are 6 brass players, how many people are in the class?

$\frac{3}{5}=\frac{6}{x};$ First Proportion to set up.

$3x=30;$

$x=10$ *string players*;
6 *brass* $+10$ *string* $=16$ *brass and string*

$\frac{2}{3}=\frac{16}{x};$ Second Proportion to set up.

$2x=28;$

$x=24$ *other musicians*;
16 *brs. and str* $+24$ *other* $=$ *40 students total*