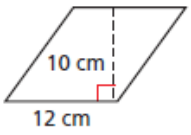
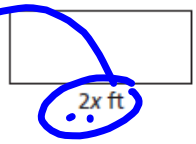
HW #9-1

Find each measurement.

1. the area of the parallelogram
$A = 120 \text{ cm}^2$



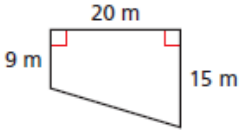
2. the height of the rectangle, in which
$A = 10x^2 \text{ ft}^2$
$h = 5x \text{ ft}$



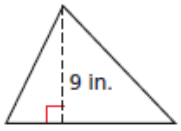
5x

3. the perimeter of a square in which $A = 169 \text{ cm}^2$ $P = 52 \text{ cm}$

4. the area of the trapezoid $A = 240 \text{ m}^2$

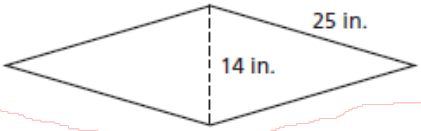


5. the base of the triangle, in which
$A = 58.5 \text{ in}^2$
$b = 13 \text{ in.}$

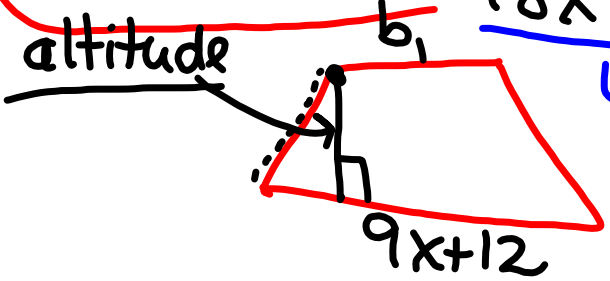


6. b_1 of a trapezoid in which $A = (48x + 68) \text{ in}^2$, $h = 8$ in., and $b_2 = (9x + 12)$ in.
$b_1 = (3x + 5)$ in.

7. the area of the rhombus $A = 336 \text{ in}^2$



$A = \left(\frac{b_1 + b_2}{2}\right) h$



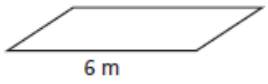
$\frac{48x+68}{4} = \left(\frac{b_1 + 9x+12}{2}\right) 8$

$12x + 17 = b_1 + 9x + 12$
$-9x - 12 \quad -9x - 12$

$3x + 5 = b_1$

Find each measurement.

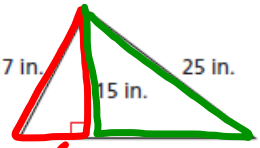
11. the height of the parallelogram, in which $A = 7.5\ m^2$ $h = 1.25$ m



$a^2+15^2=17^2$

14. the area of the triangle $A = 210\ in^2$

$15^2+y^2=25^2$

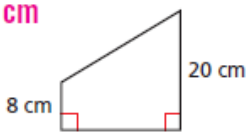


x 8 y 20

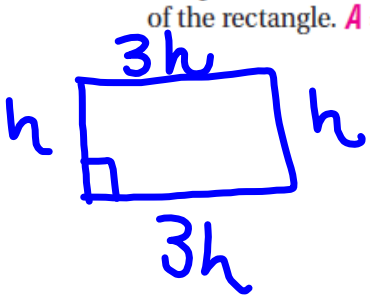
$A=\frac{1}{2}b\cdot h$

$=\frac{1}{2}(28)15$

15. the height of the trapezoid, in which $A = 280\ cm^2$ $h = 20$ cm



34. The perimeter of a rectangle is 72 in. The base is 3 times the height. Find the area of the rectangle. $A = 243\ in^2$



$\frac{8h}{8}=\frac{72}{8}$

$h=9$

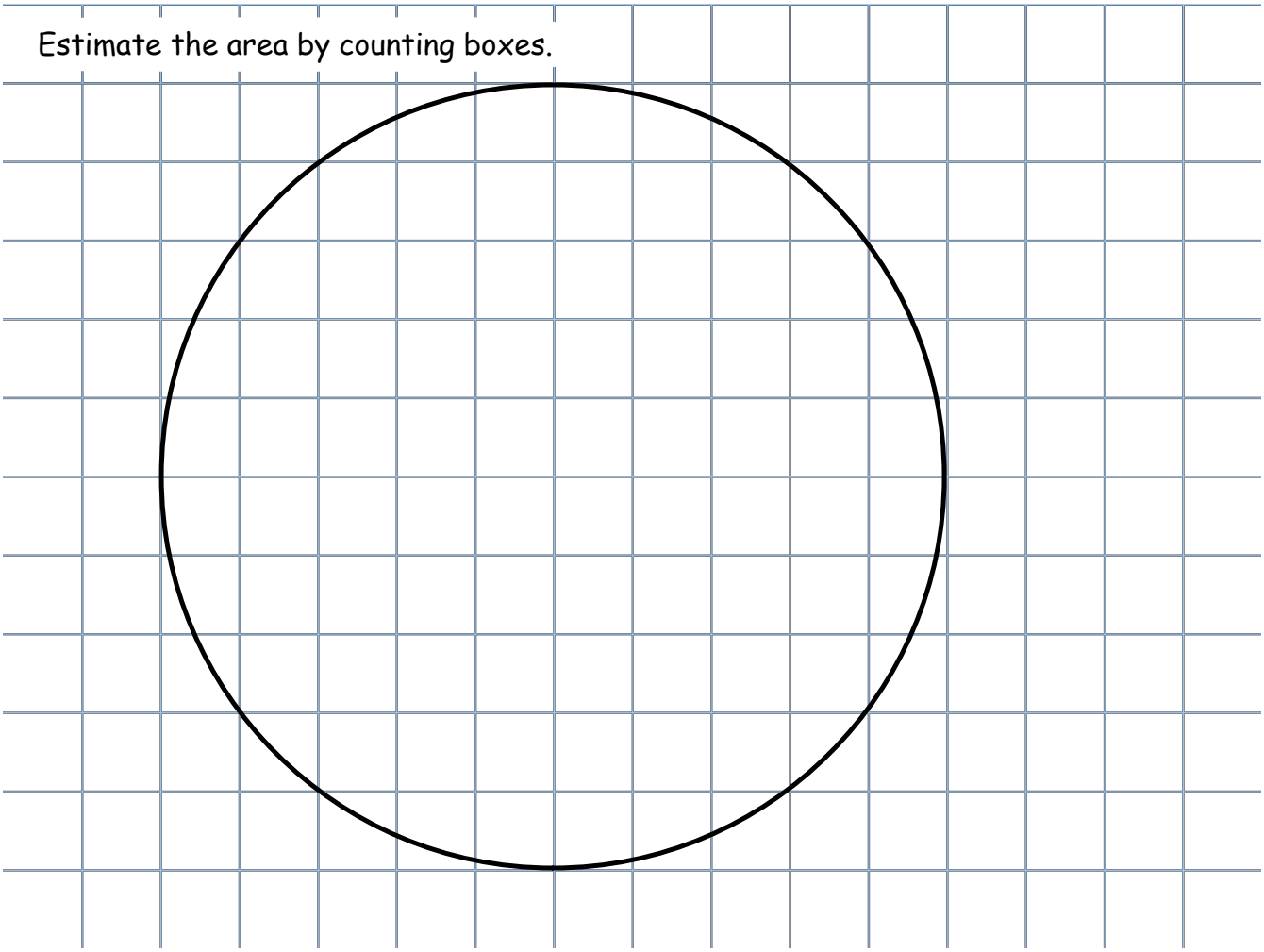
$A=b\cdot h$

$=9(27)$

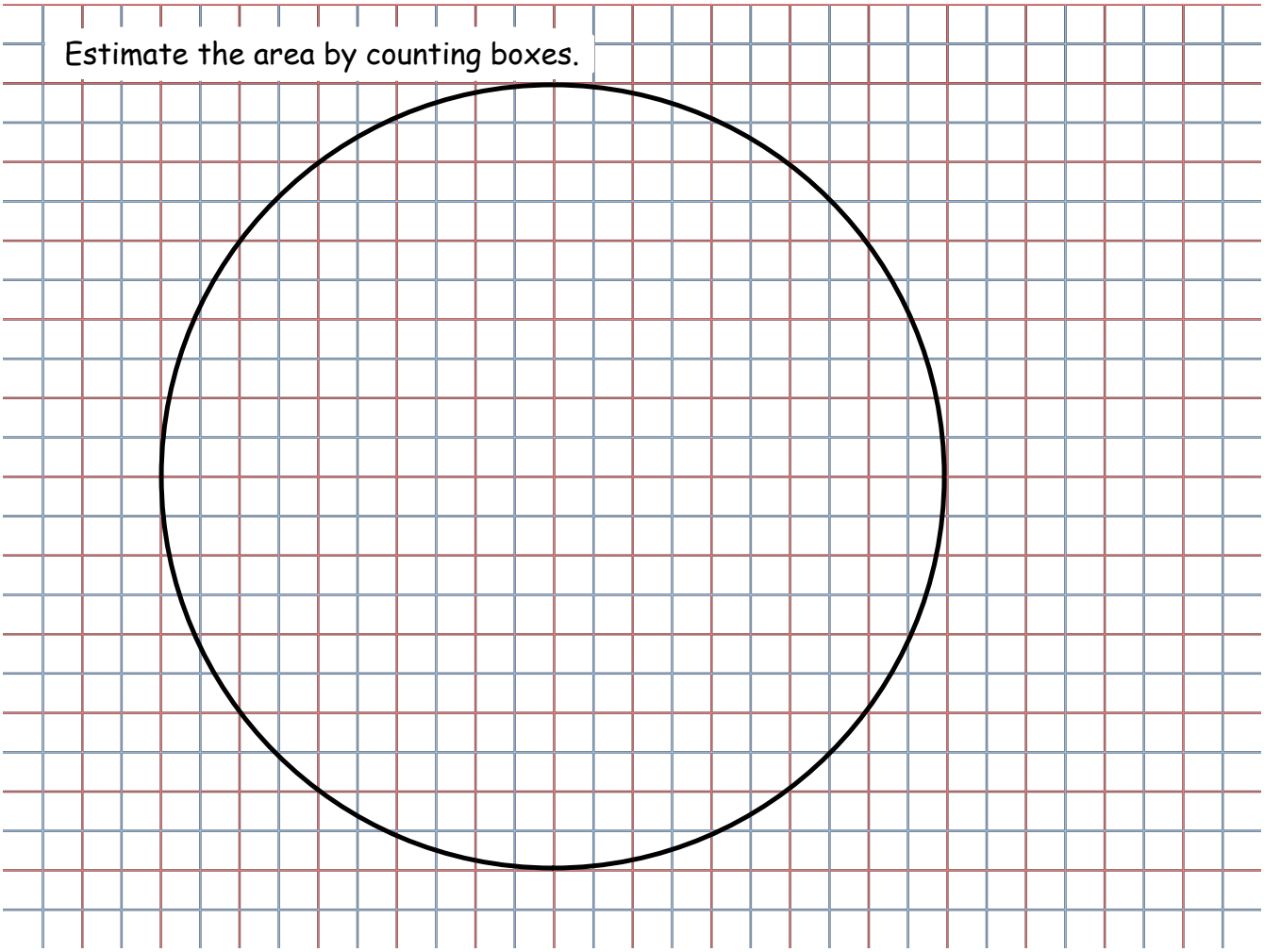
warmup

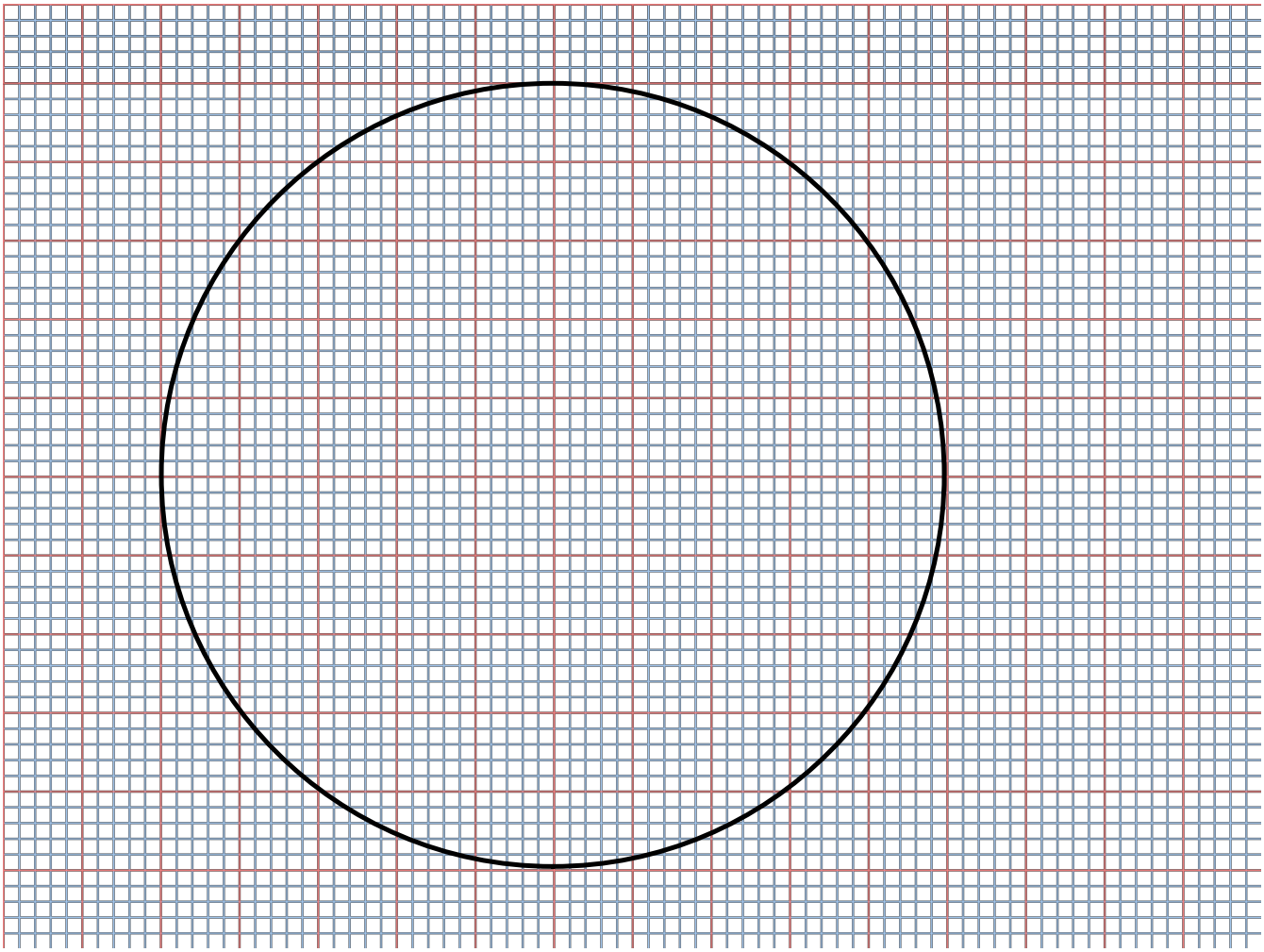
Find the height of a trapezoid with $A = 48$ in^2, $b_1=5$ and $b_2=11$.

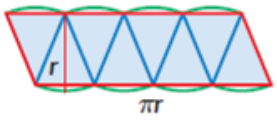
Estimate the area by counting boxes.



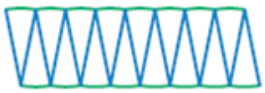
Estimate the area by counting boxes.







The base of the parallelogram is about half the circumference, or πr, and the height is close to the radius r. So A ≅ πr • r = πr².



The more pieces you divide the circle into, the more accurate the estimate will be.

**Check out the animated links on the Smartboard to see how to derive the area of a circle formula!!

Animated links to see how to derive formula for area of a circle.

http://www.education2000.com/demo/demo/botchtml/areacirc.htm

http://curvebank.calstatela.edu/circle2/circle2.htm

I took a road trip that was 7200 miles long. My car tire has a diameter of 26.4 inches. How many revolutions did my tire make on the trip?

$$7200\text{mi} \cdot \frac{5280\text{ ft}}{1\text{ mi}} \cdot \frac{12\text{ in}}{1\text{ ft}}$$

$C = \pi d$

$C = 26.4\pi$

My camper tire has a diameter of 18.46 inches. How many revolutions did it make on the trip?

$C = 18.46\pi$

Questions:

What is the relationship between diameter and circumference?

How far does the car go if the tires turn one time?

How many inches in a mile? 1 mi = 5280 ft

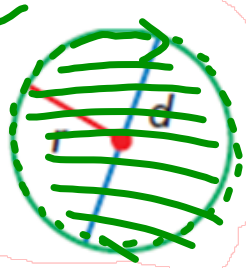
Area and Circumference of a Circle:

A circle with diameter d and radius r has

Circumference $C = \pi d$ or $C = 2\pi r$

and

Area $A = \pi r^2$.



$r = \frac{1}{2}d$

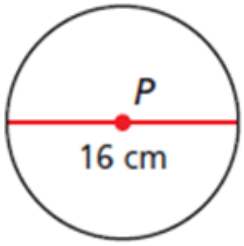
$d = 2r$

$A = \pi r^2$

$C = \pi d$

Examples: Find each measurement.

1. Find the area of Circle P in terms of π.



$A = \pi r^2$

$A = \pi (8)^2 \rightarrow A = 64\pi \text{ cm}^2$

2. Find the radius of circle X in which $C = 24\pi$ in.

$C = 2\pi r$

$\frac{24\pi}{2\pi} = \frac{2\pi r}{2\pi}$

$12 \text{ in} = r$

start with Area

3. Find the circumference of circle S in which $A = 9x^2\pi$ cm^2.

Step 1: Use the given area to solve for r.

$A = \pi r^2$

$9x^2\pi = \pi r^2$

$\sqrt{9x^2} = \sqrt{r^2}$

$3x = r$

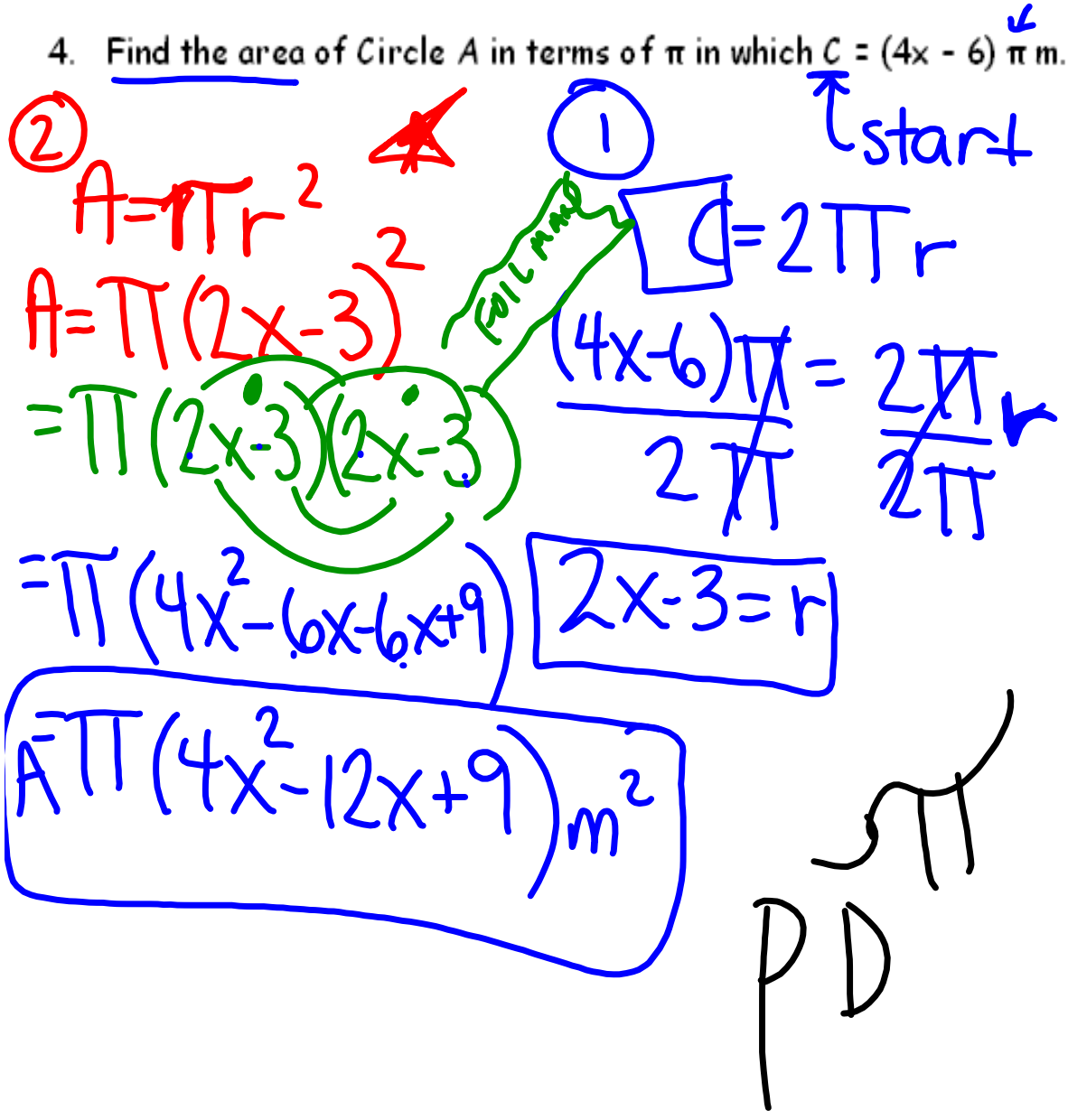
Step 2: Use the value of r to find the circumference.

$C = 2\pi r$

$C = 2\pi(3x)$

$C = 6x\pi$ cm

4. Find the area of Circle A in terms of π in which $C = (4x - 6)\pi$ m.



5. A drum kit contains three drums with diameters of 10 in, 12 in, and 14 in. Find the area and circumference of the top of each drum. Round to the nearest tenth.

a) 10 in. diameter b) 12 in. diameter c) 14 in. diameter

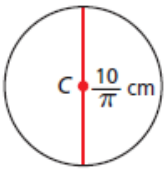
HW
Worksheet 9-2

(Start doing Quiz 1 Review in HW Packet to help you study for the quiz!)

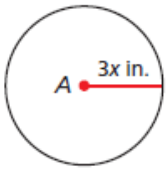
HW 9-2

Find each measurement.

2. the circumference of $\odot C$



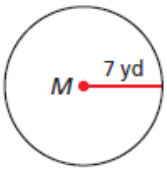
3. the area of $\odot A$ in terms of π



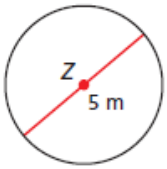
4. the circumference of $\odot P$ in which $A = 36\pi$ in^2

Find each measurement. Give your answers in terms of π.

10. the area of $\odot M$



11. the circumference of $\odot Z$



12. the diameter of $\odot G$ in which $C = 10$ ft.

Find the missing measurements for each circle. Give your answers in terms of π.

Diameter d	Radius r	Area A	Circumference C
6			
	17		

54. the area of a trapezoid in which $b_1 = 3$ yd, $b_2 = 6$ yd, and $h = 4$ yd