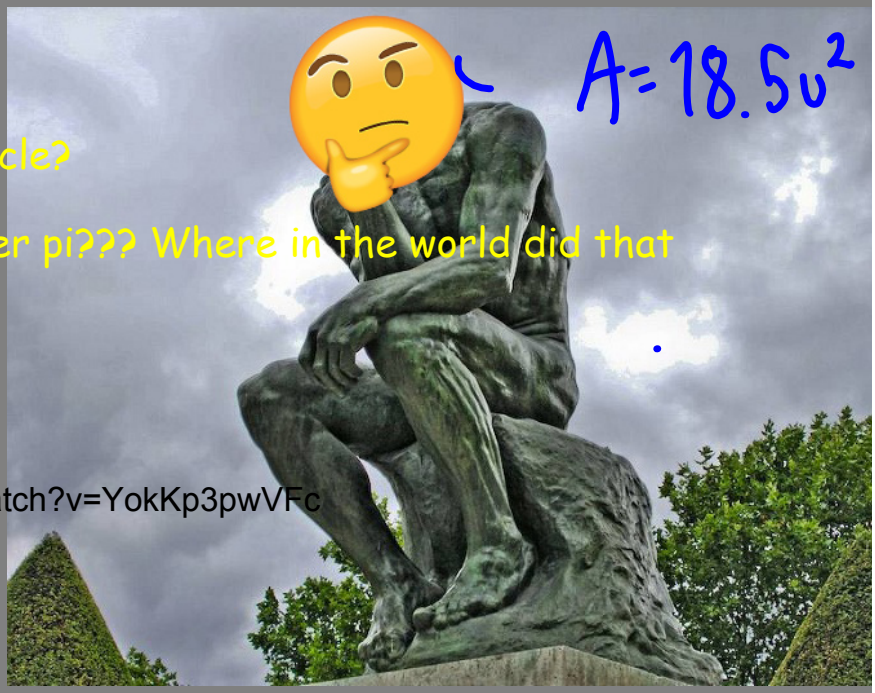
Do you ever wonder where these formulas come from??

Area of a circle?

Circumference of a circle?

What about this number pi??? Where in the world did that come from?

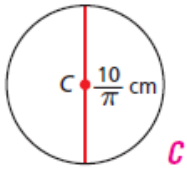


https://www.youtube.com/watch?v=YokKp3pwVFc

HW #9-2 Key

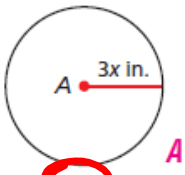
Find each measurement.

1. the circumference of $\odot C$



$C = 10$ cm

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



$A = 9x^2\pi$ in^2

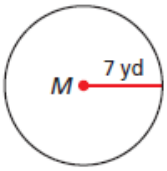
3. the circumference of $\odot P$ in which $A = 36\pi$ in^2 $C = 12\pi$ in.

$C = 2\pi r$
$= 2\pi 6$
$= 12\pi$

$A = \pi r^2$
$\frac{36\pi}{\pi} = \frac{\pi r^2}{\pi}$
$\sqrt{36} = \sqrt{r^2}$
$6 = r$

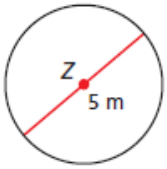
4. Find each measurement. Give your answers in terms of π.

the area of $\odot M$



$A = 49\pi$ yd^2

5. the circumference of $\odot Z$



$C = 5\pi$ m

6. the diameter of $\odot G$ in which $C = 10$ ft. $d = \frac{10}{\pi}$ ft

$C = \pi d$
$\frac{10}{\pi} = \frac{\pi d}{\pi}$

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

Diameter d	Radius r	Area A	Circumference C
6	3	9π	6π
34	17	289π	34π

8. the area of a trapezoid in which $b_1 = 3$ yd, $b_2 = 6$ yd, and $h = 4$ yd $A = 18$ yd^2

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

$A = \left(\frac{3+6}{2}\right)(4)2$

$(3+6)2$

$(9)(2)$

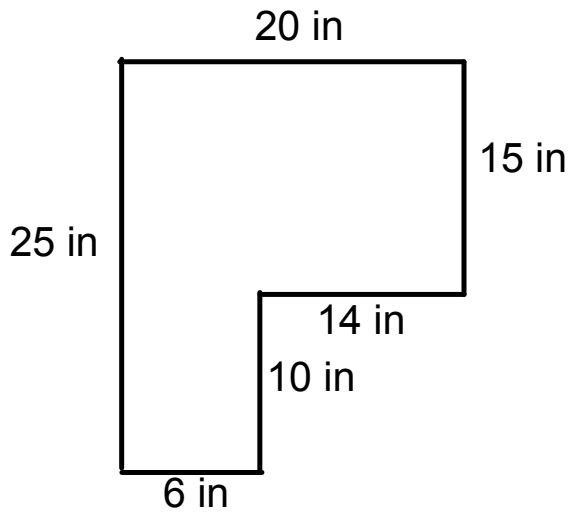
18

Day 3: Composite Figures

Learning Target:

1. Use the Area Addition Postulate to find the areas of composite figures.
2. Use composite figures to estimate the areas of irregular shapes.

Warm-Up: Find the area of the shape



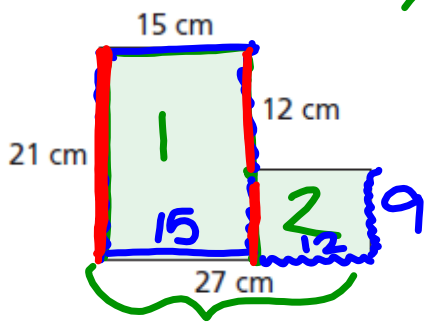
Career Info:

Landscape architects must compute areas of composite figures when designing gardens.

A composite figure is made up of simple shapes, such as triangles, parallelograms, circles, and trapezoids.

**To find the area of composite figures, find the areas of the simple shapes and then use the area addition postulate.

1.

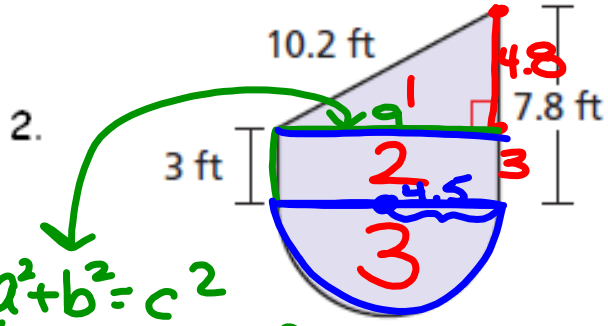


$A_1 = b \cdot h$
$= 15(21)$
$= 315\,cm^2$

$A_2 = b \cdot h$
$= 12(9)$
$= 108\,cm^2$

Total $A = 315 + 108$
$= 423\,cm^2$

2.



$a^2+b^2=c^2$

$4.8^2+b^2=10.2^2$

$A_1=\frac{1}{2}bh$

$=\frac{1}{2}(9)(4.8)$

$A=21.6\ ft^2$

$A_2=bh$

$=3(9)$

$=27\ ft^2$

$A_3=\frac{1}{2}\pi r^2$

$=\frac{1}{2}\pi(4.5)^2$

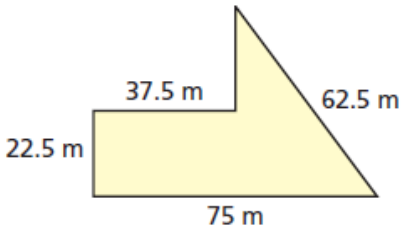
$=31.8\ ft^2$

$T=A_1+A_2+A_3$

$=80.4\ ft^2$

Try It!

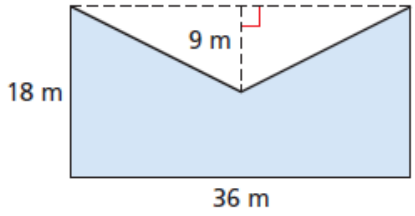
3.



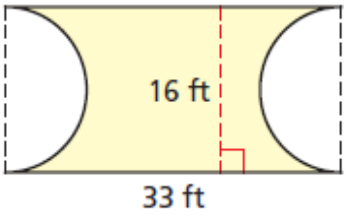
II. Finding the Areas of Composite Figures by Subtracting

For examples 4-6, find the shaded area. Round to the nearest tenth, if necessary.

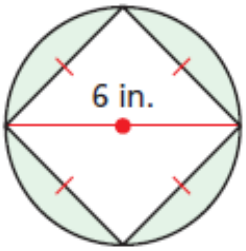
4.



5.



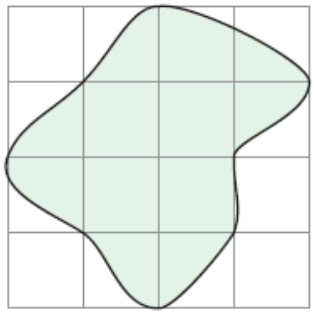
6.



remember a square is also a

III. Finding the Areas of Irregular Shapes

7. **Use a composite figure to estimate the shaded area. The grid has squares with side lengths of 1 cm.**



Method 1: Draw a composite figure	**Method 2**: Count the squares

HW
Worksheet 9-3

See Numbers 3 & 7 next page for what parts are shaded!

(remember quiz 1 review in HW Packet)

FORMULAS

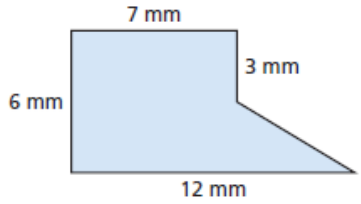
Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d$ or $C = 2\pi r$
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$

You will get these but you need to memorize trapezoid and rhombus formulas!

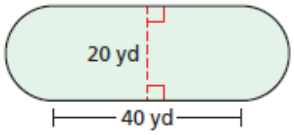
HW #9-3 Pg 609-612: 9-12, 14-17, 41

HW 9-3

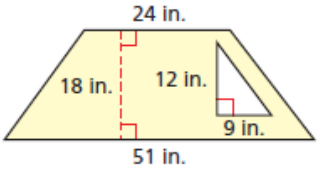
1. Find the area.



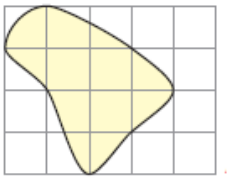
2. Find the area.



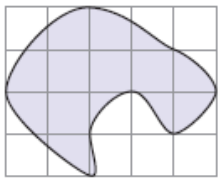
3.



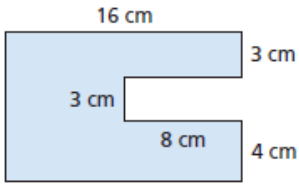
4. Estimate the shaded region. Each square has side length 1 m.



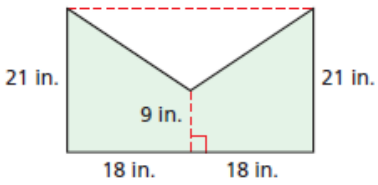
5. Estimate the shaded region. Each square has side length 1 ft.



6. Find the shaded area.



7. Find the shaded area.



8. Find the area of an equilateral triangle with a side length of 3 cm.