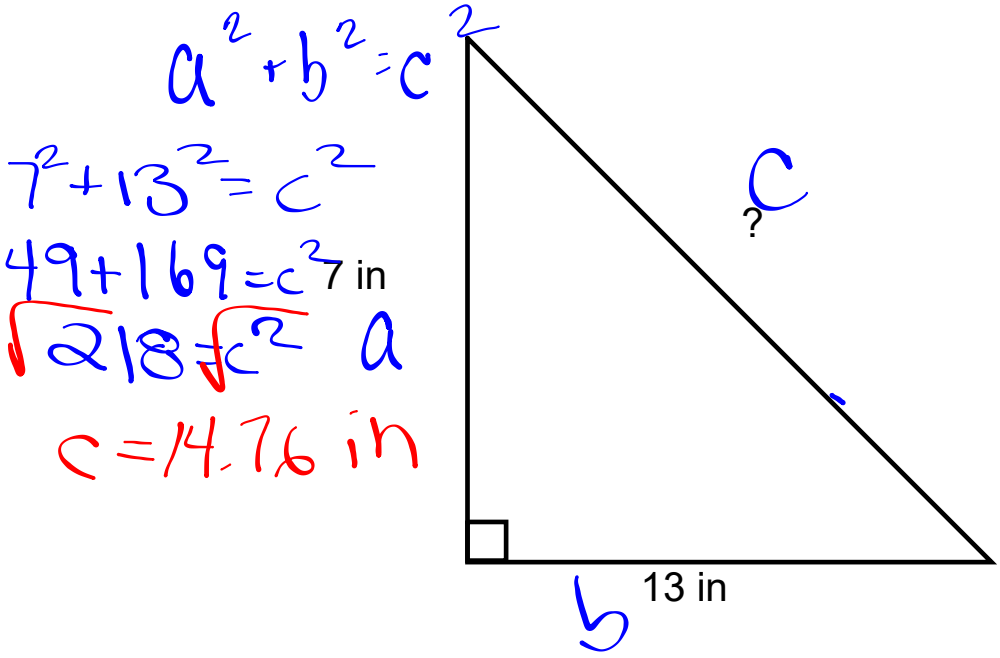
Warm Up

Calculate the unknown:



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

$7^2 + 13^2 = c^2$

$49 + 169 = c^2$

$\sqrt{218} = \sqrt{c^2}$

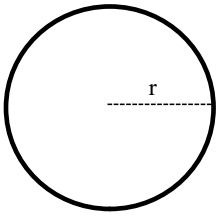
$c = 14.76$ in

AREA Formulas...

Rectangle or Square

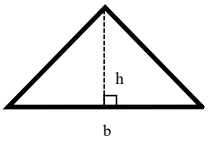
$A = bh$

Circle



$A = \pi r^2$

Triangle



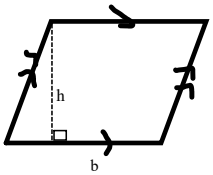
$A = \frac{1}{2} bh$

or

$A = \frac{b \times h}{2}$

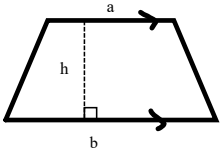
$A = \frac{b \times h}{2}$

Parallelogram or Rhombus



$A = bh$

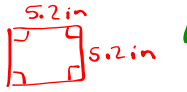
Trapezoid



$A = \frac{1}{2} h(a + b)$

or

$A = \frac{h\,(a + b)}{2}$

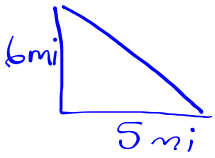


$A = b \times h$
$= 5.2 \times 5.2$
$= 27.04\ in^2$

$27.04\ in^2 \times \left[\frac{2.54\ cm}{1\ in}\right]^2 = 174.5\ cm^2$

m^2

$A = \frac{b \times h}{2}$
$= \frac{36 \times 12}{2}$
$= 216\ m^2$

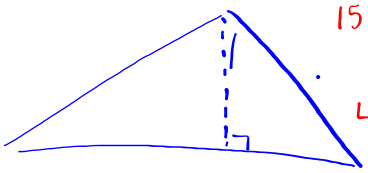


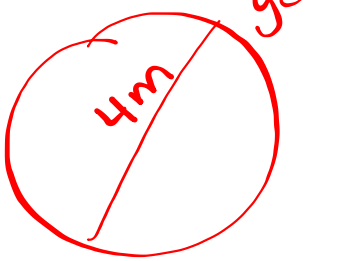
y^2

$A = \frac{b \times h}{2}$
$= \frac{6 \times 5}{2}$
$= 15\ mi^2$

$15\ mi^2 \times \left[\frac{1760\ yd}{1\ mi}\right]^2$

$46464000\ yd^2$

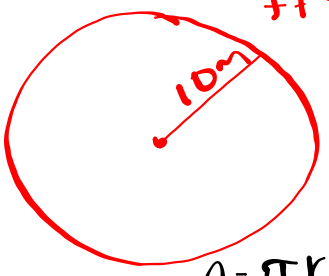




yd^2

$A = \pi r^2$
$= \pi (2m)^2$
$= \pi (4)$
$= 12.57\ m^2$

$12.57\ m^2 \times \left[\frac{1.093\ yd}{1\ m}\right]^2 = 15\ yd^2$



ft^2

$A = \pi r^2$
$= \pi (10)^2$
$= 100\pi$
$= 314.159\ m^2$

$314.159 \times \left[\frac{3.280\ ft}{1\ m}\right]^2$

$3381.5\ ft^2$

Surface Area

Grade 9 review

Surface area is the total area of all of the faces of the object.

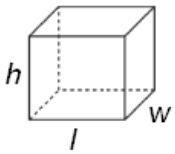
Steps need to find Surface area are:

1. Draw all of the faces with dimensions displayed on them.
2. Find the area of each face.
3. Then add up the areas of all of the faces.

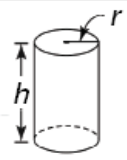
Activate Prior Learning:

Surface Areas of Right Prisms and Cylinders

SA =(Area of base) x height

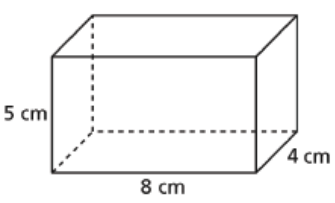


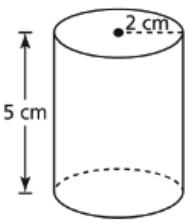
$SA = 2wl + 2hl + 2hw$



$SA = 2\pi r^2 + 2\pi rh$

Which object below has the greater surface area?

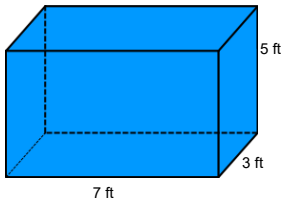




1.4 Surface Areas of Right Pyramids and Right Cones

Surface Area

What is the surface area of the rectangular prism in squared metres?



F+B 5ft 7ft
A = b x h
= 7 x 5
= 35 ft²
x2
70 ft²

L+R 5ft 3ft
A = b x h
= 3 x 5
= 15 ft²
x2
30 ft²

T+B 3ft 7ft
A = b x h
= 7 x 3
= 21 ft²
x2
42 ft²

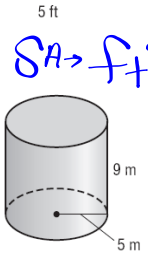
SA = 70 ft² + 30 ft² + 42 ft²
= 142 ft²
$142\,ft^2 \times \left[\frac{1\ m}{3.280\ ft}\right]^2 = 13.2\,m^2$

5 cylinder with height h and radius r is the area of area of the curved surface, or $S = 2\pi r^2 + 2\pi rh$.

the surface area of the cylinder.
d to the nearest tenth.

Surface area of a cylinder

re meters



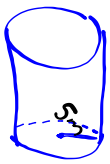
SA → ft²

What is the surface area of the cylinder in squared yards?

circumference 2πr × h, x2

$2\pi r^2$ (top & bottom circle) + $2\pi rh$ (rect)

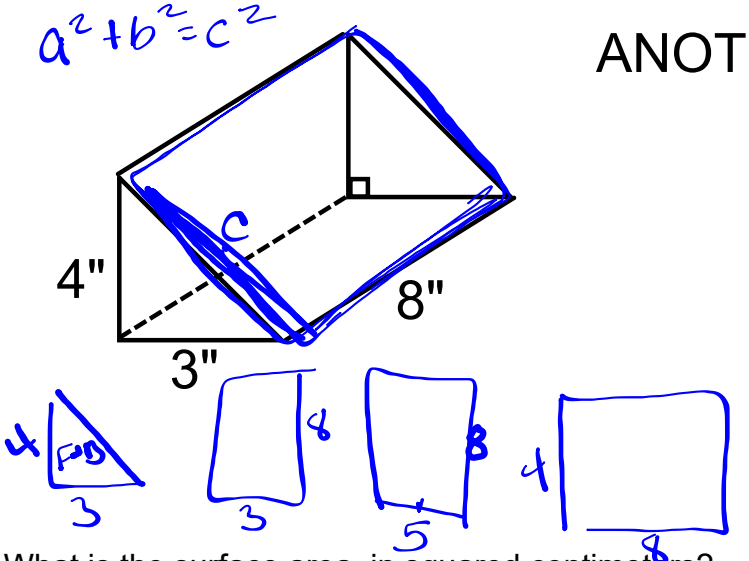
$SA_{cyl} = 2\pi r^2 + 2\pi rh$



$= 2(\pi)(5)^2 + 2(\pi)(5)(9)$
$= 2\pi(25) + 2\pi(45)$
$= 50\pi + 90\pi$
$= 140\pi$
$= 439.8\,m^2$

$439.8\,m^2 \times \left[\frac{3.280\ ft}{1\ m}\right]^2 = 4734\,ft^2$

EXAMPLE #3:



ANOTHER FORMULA...

What is the surface area in squared centimeters?

Homework- Finish this

Class/ Homework

Last slide - finish question

Worksheet: 7-7 Practice Skills
- 1-3

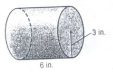
NAME _____ DATE _____ PERIOD ____

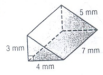
7-7 Practice: Skills

Surface Area of Prisms and Cylinders

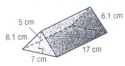
Find the surface area of each solid. Round to the nearest tenth if necessary.

1. 

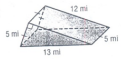
2. 

3. 

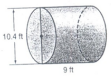
4. 

5. 

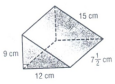
6. 

7. 

8. 

9. 

10. 

11. 

12. 

13. cube: edge length, 11 m

14. rectangular prism: length, 9 cm; width, 13 cm; height, 18.4 cm

15. cylinder: radius, 9.4 mm; height, 15 mm

16. cylinder: diameter, 28 in.; height, 12.6 in.

Attachments

Worksheet - Surface Area of Prisms and Cylinders.docx

Worksheet4_Basic Area Conversions.pdf