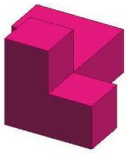
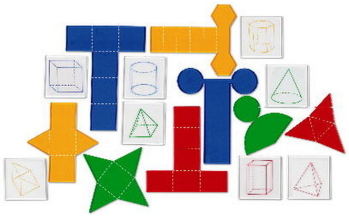
Warm Up Grade 8





Assessment Review

1) Write the following as a fraction, decimal and a percent. "6 out of 8 wins"

$\frac{6}{8} = \frac{3}{4} = 0.75 \Rightarrow 75\%$

2) Jim gets paid $12/hour on weekdays and $16/hour on weekends. If he works 8 weekly hours and 3 weekend hours, how much will he get paid?

$\$12 \times 8 = \$96$ weekdays
$\$16 \times 3 = \$48$
$\$144$ Total

Review from Friday's class

1) Sketch the diagram and find the area for each shape.

a) a triangle with a base of 7m and a height of 6m

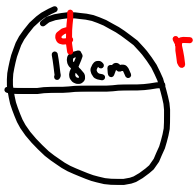
$A_\Delta = \frac{b \times h}{2}$

$= \frac{6m \times 7m}{2}$

$= \frac{42m^2}{2}$

$= 21m^2$

b) a circle with a diameter of 18 cm



$r = 9cm$

$A_o = \pi r^2$

$= 3.14 \times (9cm)^2$

$= 3.14 \times 81cm^2$

$= 254.34 cm^2$

Name:_____

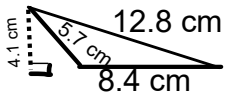
1) Find the area of each shape (Show all work)

a) 

A = L x W

= 17cm x 9 cm

= 153 cm^2

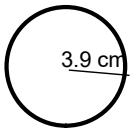
b) 

A = $\frac{B \times H}{2}$

= $\frac{8.4cm \times 4.1\ cm}{2}$

= $\frac{34.44\ cm^2}{2}$

= 17.22 cm^2

c) 

A = πr^2

= 3.14 x $(3.9cm)^2$

= 3.14 x 15.21 cm^2

= 47.76cm^2

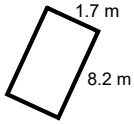
d) 

A = $\frac{B \times H}{2}$

= $\frac{11cm \times 7\ cm}{2}$

= $\frac{77\ cm^2}{2}$

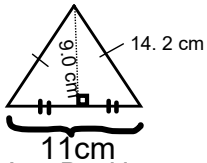
= 38.5 cm^2

e) 

A = L x W

= 1.7 m x 8.2 m

= 13.94 m^2

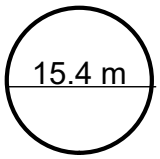
f) 

A = $\frac{B \times H}{2}$

= $\frac{11\ cm \times 9.0\ cm}{2}$

= $\frac{99\ cm^2}{2}$

= 49.5 cm^2

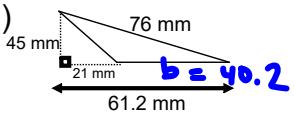
g) 

A = πr^2

= 3.14 x $(7.7m)^2$

= 3.14 x 59.29m^2

= 186.17 m^2

h) 

Base = 61.2 mm - 21 mm

= 40.2 mm

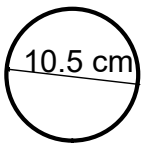
height = 45 mm

A = $\frac{B \times H}{2}$

= $\frac{40.2mm \times 45\ mm}{2}$

= $\frac{1809\ mm^2}{2}$

= 904.5 mm^2

i) 

A = πr^2

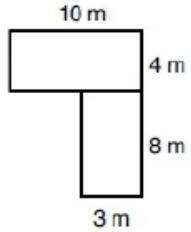
= 3.14 x $(5.25cm)^2$

= 3.14 x 27.56 cm^2

= 86.55 cm^2

2) Find the total surface area of the combined shapes (Show all work)

a)



A = L x W

= 10m x 4m

= 40m^2

A = L x W

= 8cm x 3 cm

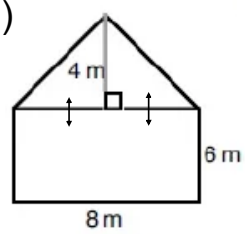
= 24 m^2

Total Surface area

=40 m^2 + 24m^2

= 64 m^2

b)



A = L x W

= 8m x 6m

= 48 m^2

A = B x H

2

= 8m x 4 m

2

= 32 m^2

2

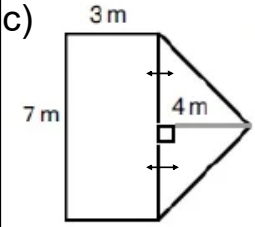
= 16 m^2

Total Surface area

= 48 m^2 + 16m^2

= 64 m^2

c)



A = L x W

= 7m x 3m

= 21m^2

A = B x H

2

= 7m x 4 m

2

= 28 m^2

2

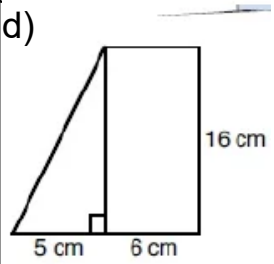
= 14 m^2

Total Surface area

=14 m^2 + 21m^2

= 35m^2

d)



A = L x W

= 6 cm x 16 cm

= 96 cm^2

A = B x H

2

= 5cm x 16 m

2

= 80 cm^2

2

= 40 m^2

Total Surface area

=96 cm^2 + 40cm^2

= 136 cm^2

3) Find the surface area of each shape.

a) A triangle with a base of 7 cm and a height of 14 cm.

$A = \frac{B \times H}{2}$

$= \frac{7\text{ cm} \times 14\text{ cm}}{2}$

$= \frac{98\text{cm}^2}{2}$

$= 49\text{ cm}^2$

b) a circle with a diameter of 34 cm.

$A = \pi r^2$

$= 3.14 \times (17\text{cm})^2$

$= 3.14 \times 289\text{ cm}^2$

$= 907.46\text{ cm}^2$

c) A Rectangle with a length of 16 cm and the height double that.

$A = L \times W$

$= 16\text{ cm} \times 32\text{ cm}$

$= 512\text{ cm}^2$

height = 2 base

$= 2 \times 16\text{ cm}$

$= 32\text{ cm}$

d) A square with side length 23 m.

$A = L \times W$

$= 23\text{ m} \times 23\text{ m}$

$= 529\text{ m}^2$

e) A rectangle with base 42m and height length of 15 m less than base.

length = 42 - 15

= 27 m

$A = L \times W$

$= 27\text{ m} \times 42\text{ m}$

$= 1134\text{ m}^2$

f) A circle with radius 6.2 mm.

$A = \pi r^2$

$= 3.14 \times (6.2\text{ mm})^2$

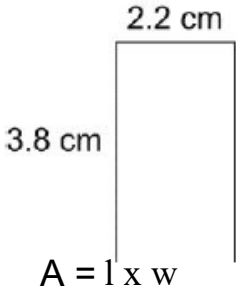
$= 3.14 \times 38.44\text{ m}^2$

$= 120.70\text{ mm}^2$

Area of Two-Dimensional Shapes

1) Find the area of each shape.

a)

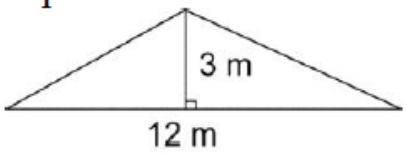


A = l x w

= 3.8 cm x 2.2 cm

= 8.32 cm^2

b)



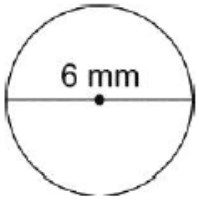
$A = \frac{b \times h}{2}$

$= \frac{12\ m \times 3\ m}{2}$

$= \frac{36\ m^2}{2}$

= 18 m^2

c)



$A = \pi r^2$

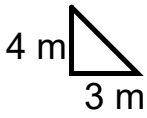
$= 3.14 \times (3\ mm)^2$

= 3.14 x(9mm^2)

= 28.26 mm^2

2) Find the area of the each shape and sketch the shape.

a. A triangle with height 3 m and base 4 m



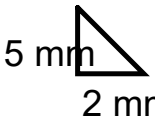
$A = \frac{b \times h}{2}$

$= \frac{4\text{ m} \times 3\text{ m}}{2}$

$= \frac{12\text{ m}^2}{2}$

$= 6\text{ m}^2$

b. A triangle with height 2 mm and base 5 mm



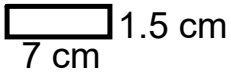
$A = \frac{b \times h}{2}$

$= \frac{2\text{ mm} \times 5\text{ mm}}{2}$

$= \frac{10\text{ mm}^2}{2}$

$= 5\text{ mm}^2$

c. A rectangle with length 7 cm and width 1.5 cm

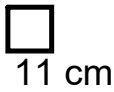


$A = l \times w$

$= 7\text{ cm} \times 1.5\text{ cm}$

$= 10.5\text{ cm}^2$

d. A square with side length 11 cm

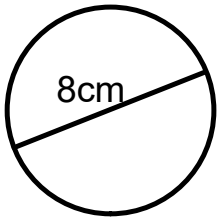


$A = l \times w$

$= 11\text{ cm} \times 11\text{ cm}$

$= 121\text{ cm}^2$

e. A circle with diameter 8 cm



$A = \pi r^2$

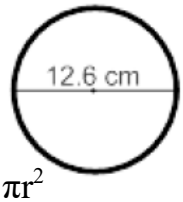
$= 3.14 \times (4\text{ cm})^2$

$= 3.14 \times (16\text{ cm}^2)$

$= 50.24\text{ cm}^2$

3) Find the surface Area

a)



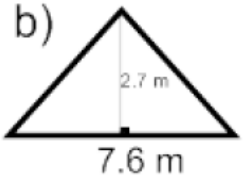
$A = \pi r^2$

$= 3.14 \times (6.3\ cm)^2$

$= 3.14 \times (39.69\ m^2)$

$= 126.6266\ cm^2$

b)



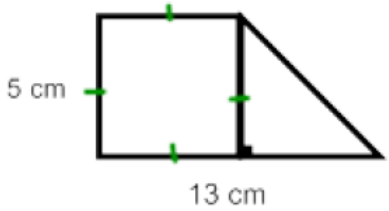
$A = \frac{b \times h}{2}$

$= \frac{7.6\ m \times 2.7\ m}{2}$

$= \frac{20.52\ m^2}{2}$

$= 10.26\ m^2$

c)



$A = l \times w$

$= 5\ cm \times 5\ cm$

$= 25\ cm^2$

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

$= \frac{8\ cm \times 5\ cm}{2}$

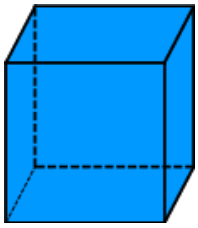
$= \frac{40\ cm^2}{2}$

$= 20\ cm^2$

Atotal = 20 + 25 = 45

Surface Area of Right Rectangular Prisms

Surface Area is the sum of the area of all the faces of a 3D object.

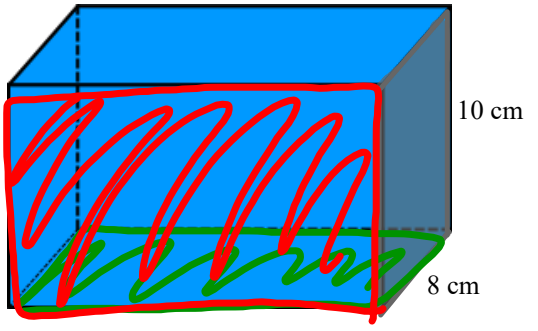


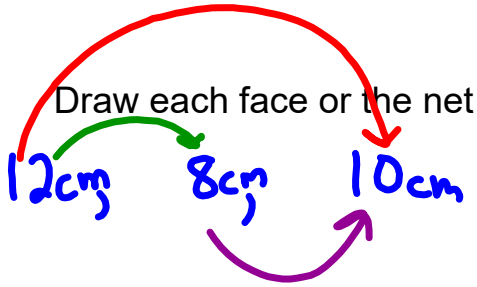
Square units (for example: m^2, cm^2) are used to measure area and surface area and MUST be included!

How to Find Surface Area of 3D Objects

To find surface area:

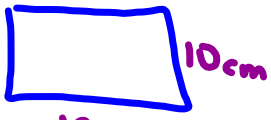
1. **Draw all of the faces (or you can draw a net).**
2. **Find the area of each face.**
3. **Then add up the areas of all of the faces.**





Faces

Front/Back



$A_{\square} = L \times W$

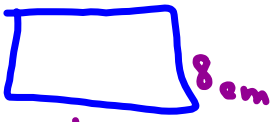
$= 12cm \times 10cm$

$= 120cm^2$

$\times 2$

$240cm^2$

L/R



$A_{\square} = L \times W$

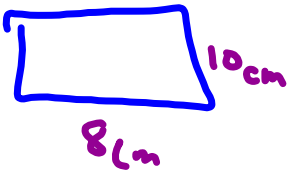
$= 12cm \times 8cm$

$= 96cm^2$

$\times 2$

$192cm^2$

Top / Bottom



$A_{\square} = L \times W$

$= 8cm \times 10cm$

$= 80cm^2$

$\times 2$

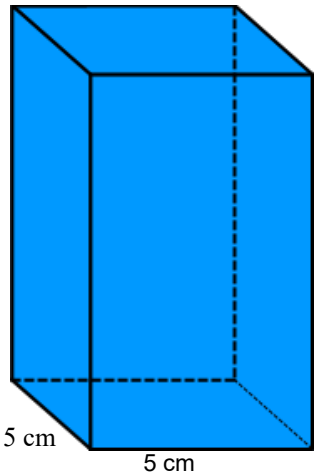
$160cm^2$

2 Front + 2 Right + 2 Top

Total SA = $240 + 192cm^2 + 160cm^2$

Total SA = $592cm^2$

What is the surface area of this rectangular prism?



sketch nets or the faces

5cm, 5cm, 12cm

Fr/Back

5cm
5cm

$A_{\square} = L \times W$
$= 5cm \times 5cm$
$= 25cm^2$
$\times 2$ Fr/Back
$50cm^2$

L/R

12cm
5cm

$A_{\square} = L \times W$
$= 5cm \times 12cm$
$= 60cm^2$
$\times 2$ L/R
$120cm^2$

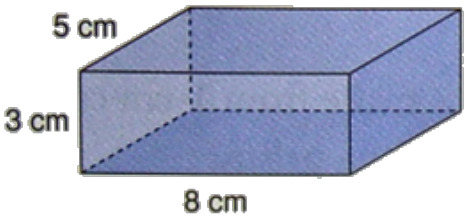
Top/Bott

12cm
5cm

$A_{\square} = L \times W$
$= 5cm \times 12cm$
$= 60cm^2$
$\times 2$ Top/Bot
$120cm^2$

$Total\ SA = 50cm^2 + 120cm^2 + 120cm^2$
$= 290cm^2$

What is the surface area of this prism?

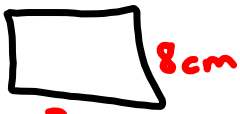


3cm 5cm 8cm

Ff / Back

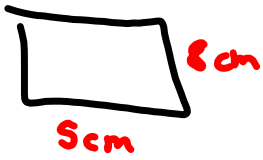
$A_{\square} = L \times W$
$= 3cm \times 5cm$
$= 15cm^2$
$\times 2$
$30cm^2$

L / R



$A_{\square} = L \times W$
$3cm \times 8cm$
$= 24cm^2$
$\times 2$
$48cm^2$

Top / Bott

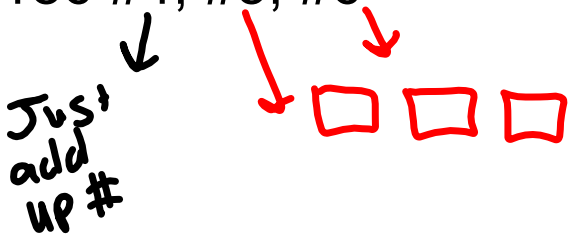


$A_{\square} = L \times W$
$= 5cm \times 8cm$
$= 40cm^2$
$\times 2$
$80cm^2$

$\text{Total SA} = 30cm^2 + 48cm^2 + 80cm^2$
$= 158cm^2$

Practice Questions

Page 186 #4, #5, #6



Extra help after school!!

Attachments

Review of Surface area of 2D Shape Grade 8 Unit 4 PDF.pdf