READY FOR THE TEST ON... Wednesday!!!

Geo_Mea_Fin 10 - Conversion Tables and Formula Sheet (Chp4_5).pdf

5.4 - Practice Problems.doc

Chapter 5 Sample Test.pdf

*** Corrections... MC #3 → 7.2°C
OR #22 → 8.3°C ≈ 80.6°F

Hw ???

9. The moon has a gravitational force that is approximately 0.165 that of earth's. If an object weighs 200 pounds on earth, what will it weigh on the moon?

a) 15 lb b) 200 lb c) 90.91 lb d) 33 lb

200 lbs x 0.165

10. Jupiter has a gravitational force that is 2.34 times greater than earth's. If an object weighs 100 pounds on earth, what will it weigh on Jupiter?

a) 234 lb b) 42.74 lb c) 100 lb d) 45.46 lb

100 x 2.34

Surface Area, Volume & Capacity

- Math on the Job... page 224:

A standard roll of antique wallpaper measures 21" wide and 21' long, with the 21' length plastered vertically. Becky needs to completely paper the following walls:

Wall 1: 14 feet wide by 12 feet high

Wall 2: 16 feet wide by 12 feet high

Wall 3: 10 feet wide by 12 feet high

Wall 4: 20 feet wide by 12 feet high

1. How many rolls will Becky need to cover each wall?
2. What is the minimum number of rolls Becky will need to order to cover all of these walls?

$A_{①} = 14 \times 12$

$A_{①} = 168\ ft^2$

Roll Area...

$21\ in \times \frac{1\ ft}{12\ in} = 1.75\ ft$

$A_{roll} = 1.75 \times 21$

$= 36.75\ ft^2$

rolls for Wall #1...

$\frac{168}{36.75} = 4.57$

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SOLUTION

1. To calculate the number of wallpaper rolls needed, first calculate the surface area of one roll of wallpaper.

   Convert the width to feet.
   21 in ÷ 12 in/ft = 1.75 ft

   SA = width × length
   SA = 1.75 × 21
   SA = 36.75 sq. ft.

   Calculate the area of each wall.

   Wall 1:
   SA = width × length
   SA = 14 × 12
   SA = 168 sq. ft.

   Number of rolls to cover Wall 1:
   168 ÷ 36.75 ≈ 4.6

   Wall 2:
   SA = width × length
   SA = 16 × 12
   SA = 192 sq. ft.

   Number of rolls to cover Wall 2:
   192 ÷ 36.75 ≈ 5.2

   Wall 3:
   SA = width × length
   SA = 10 × 12
   SA = 120 sq. ft.

   Number of rolls to cover Wall 3:
   120 ÷ 36.75 ≈ 3.3

   Wall 4:
   SA = width × length
   SA = 20 × 12
   SA = 240 sq. ft.

   Number of rolls to cover Wall 4:
   240 ÷ 36.75 ≈ 6.5

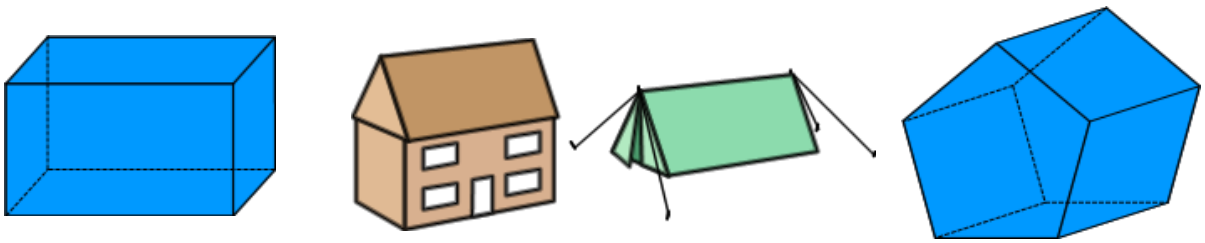
2. Total rolls:
   4.6 + 5.2 + 3.3 + 6.5 = 19.6

   Becky will need at least 20 rolls of wallpaper.

3 Dimensional Shapes...

- **Prism -** a 3D shape with ends that are congruent polygons and with sides that are parallelograms.

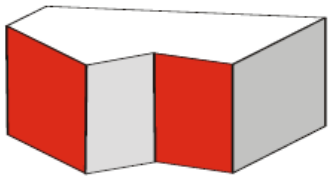
ex: rectangular prism; triangular prism



- **Base - o**ne of the parallel faces of a prism
- **Lateral Face** - a face that connects the bases of a prism.

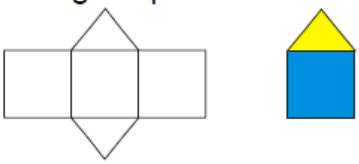
4.12.3: Right Prisms and Their Nets (Teacher)

A right prism is a prism with two congruent polygon faces that lie directly above each other.
The base is the face that "stacks" to create the prism. This face determines the name of the prism.

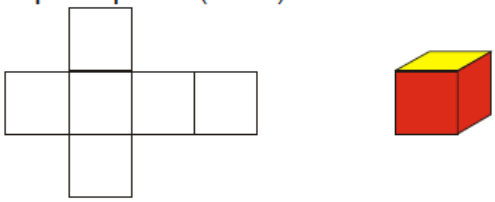


Some right prisms and their nets:

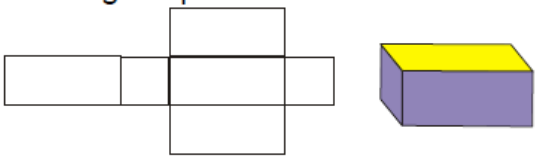
Triangular prism:



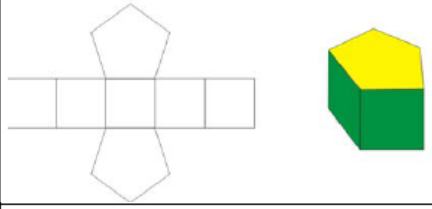
Square prism (cube):



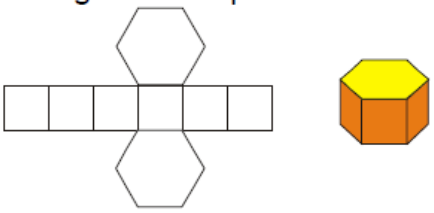
Rectangular prism:



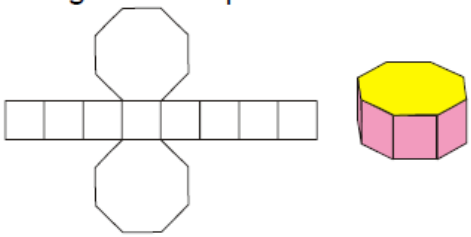
Pentagon-based prism:



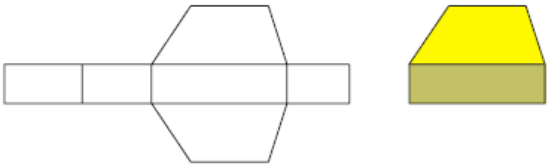
Hexagon-based prism:



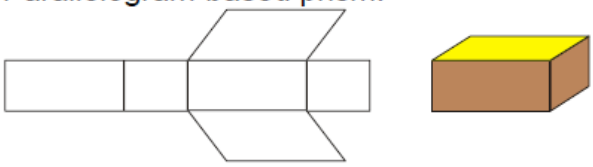
Octagon-based prism:



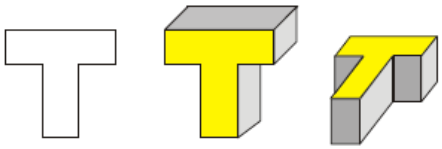
Trapezoid-based prism:



Parallelogram-based prism:

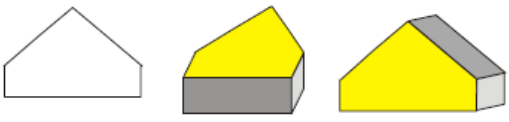


Right prisms with bases that are composite figures:



Composite figure

Right prism



Composite figure

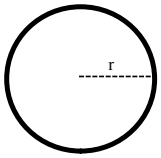
Right prism

REVIEW: Area Formulas...

Rectangle or Square

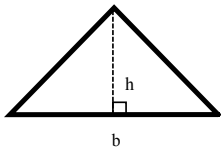
$A = bh$

Circle



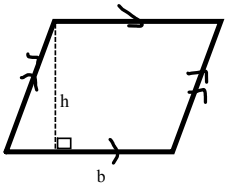
$A = \pi r^2$

Triangle



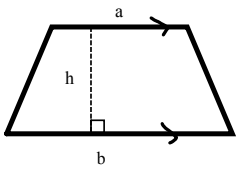
$A = \frac{1}{2} bh$

Parallelogram or Rhombus



$A = bh$

Trapezoid



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

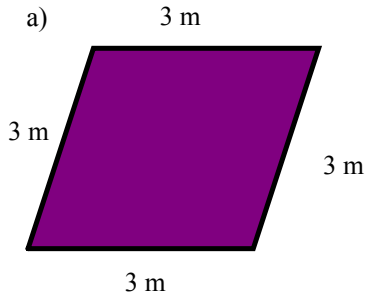
Perimeter and Circumference

The perimeter is the distance around an object.

Ex: What is the perimeter of the following shapes?

Rhombus

a)

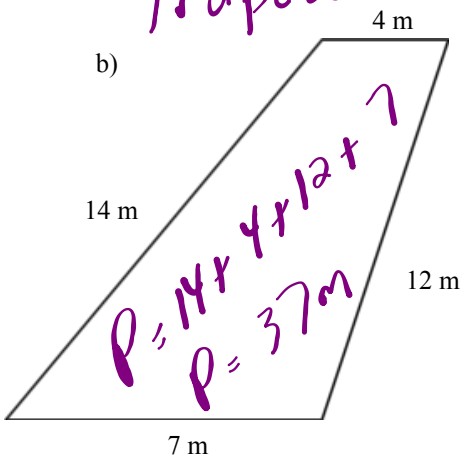


$P = 4 \times 3$

$P = 12\text{ m}$

Trapezoid

b)



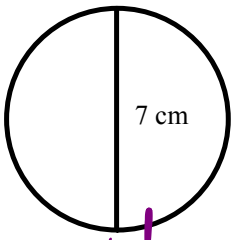
$P = 14 + 4 + 12 + 7$

$P = 37\text{m}$

Circumference

$2\pi r$ OR πd

c)



$C = \pi d$

$C = \pi(7)$

$C = 22\text{cm}$

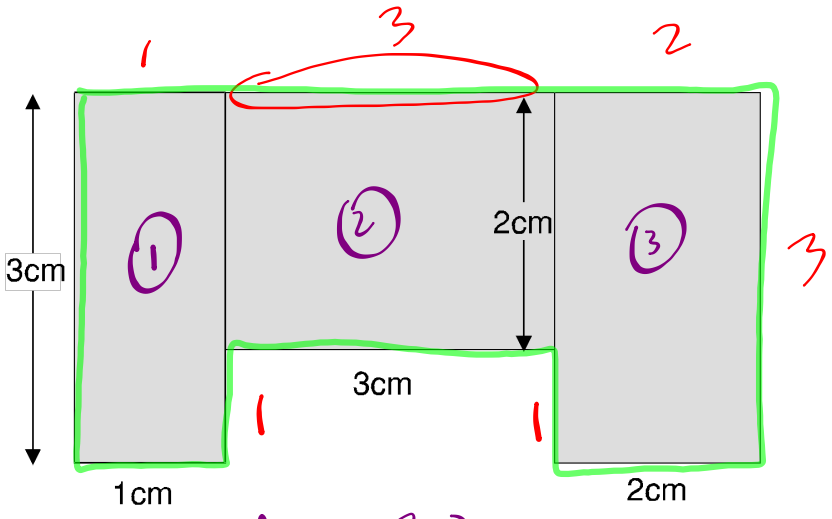
Perimeter and area

1) Find the perimeter of each figure.
2) Find the area of each figure - they have been divided into rectangles for you.

1)

$P = 6+3+3+3+2+3$

$P = 20\text{ cm}$



2) $A_{①} = 3 \times 1$

$A_{①} = 3\text{cm}^2$

$A_{②} = 3 \times 2$

$A_{②} = 6\text{cm}^2$

$A_{③} = 3 \times 2$

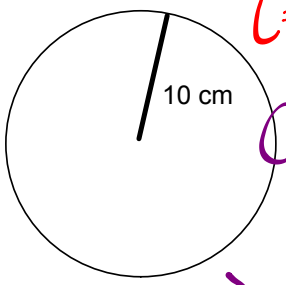
$A_{③} = 6\text{cm}^2$

$A_{total} = 3 + 6 + 6$

$= 15\text{cm}^2$

EXERCISE: Find Perimeter and Area of each shape...

1)



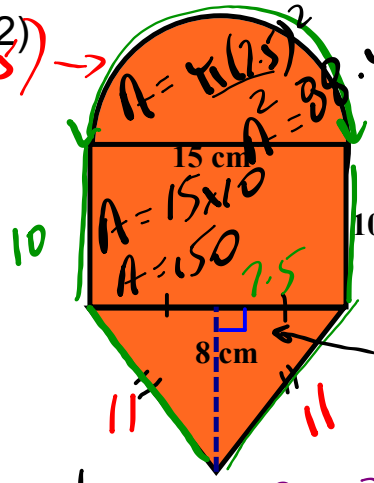
$C = 2\pi(10)$

$C = 62.8$ cm

$A = \pi(10)^2$

$A = 314.2$ cm^2

2)



$C = \frac{2\pi(2.5)}{2} \rightarrow$

$C = 23.6$

$A = \frac{\pi(2.5)^2}{2} = 9.8$

$A = 15 \times 10$

$A = 150$

$A = \frac{15(8)}{2}$

$A = 60$

$x^2 = 8^2 + 7.5^2$

$\sqrt{x^2} = \sqrt{120.25}$

$x = 11$

$A_{total} = 98.4 + 150 + 60$

298.4 cm^2

$P = 23.6 + 20 + 22$

$P = 65.6$ cm

HOMEWORK... Test Tomorrow

Due Thurs

Review - Prior Knowledge for Section 6.1.pdf

BLACKLINE MASTER 6.9: SOLUTIONS

Order of Operations

1. $5^2 \times 3 - (84 - 37)$

$= 25 \times 3 - 47$
$= 75 - 47$
$= 28$

2. $(22 - 25)^3 \div [(13 - 7) + 3]$

$= (-3)^3 \div (6 + 3)$
$= -27 \div 9$
$= -3$

3. $\left(\frac{36}{9}\right)^2 \times 2 - 15 \div (-3)$

$= 4^2 \times 2 - 15 \div (-3)$
$= 16 \times 2 - (-5)$
$= 32 + 5$
$= 37$

4. $(-4)^3 + (5 - 11)^2 \div 12 + 20$

$= -64 + (-6)^2 \div 12 + 20$
$= -64 + 36 \div 12 + 20$
$= -64 + 3 + 20$
$= -41$

Finding the Area of Composite Figures

5. $A = \ell w$

$A = (10.5)(4.5)$

$A = 47.25 \text{ in}^2$

6. $A = wh$

$A = (12)(18)$

$A = 216 \text{ cm}^2$

7. $A = \pi r^2$

$A = \pi(3.5)^2$

$A \approx 38.48 \text{ yd}^2$

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

$A = \frac{1}{2}(5)(2.9)$

$A = 7.25 \text{ ft}^2$

Working with Formulas

9. $4\pi r^2 \ (r = 3.4)$

$= 4\pi(3.4)^2$
≈ 145.27

10. $\frac{1}{3}\pi r^2 h \ (r = 5.2, h = 8)$

$= \frac{1}{3}\pi(5.2)^2(8)$

≈ 226.53

11. $\pi rs + \pi r^2 \ (r = 3, s = 4.3)$

$= \pi(3)(4.3) + \pi(3)^2$
$\approx 40.53 + 28.27$
≈ 68.8

12. $2\pi r^2 + 2\pi rh \ (r = 6.7, h = 12.3)$

$= 2\pi(6.7)^2 + 2\pi(6.7)(12.3)$
$\approx 282.05 + 517.80$
≈ 799.85

Converting Measurements Within and Between the SI and Imperial Systems

13. 4.56 km; metres

1 km = 1000 m
4.56 km = 4560 m

14. 56.64 yd; inches (1 yard = 36 inches)

1 yard = 36 inches
56.64 yards = 2039.04 inches

15. 27.2 feet; cm (1 foot ≈ 30.48 cm)

1 foot ≈ 30.48 cm
27.2 feet ≈ 829.056 cm

16. 89.2 miles; km (1 mile = 1.609344 km)

1 mile = 1.609344 km
89.2 miles ≈ 143.55 km

Attachments

5.4 - Practice Problems.doc

Chapter 5 Sample Test.pdf

Geo_Mea_Fin 10 - Conversion Tables and Formula Sheet (Chp4_5).pdf

Review - Prior Knowledge for Section 6.1.pdf