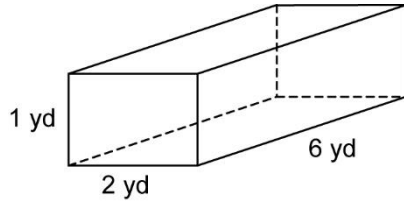


## CHAPTER 9 REVIEW

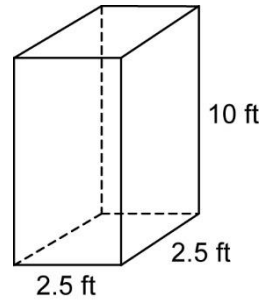
### 9.1 – VOLUMES OF PRISMS and PYRAMIDS

1. Calculate the **volume** of each prism

(a)

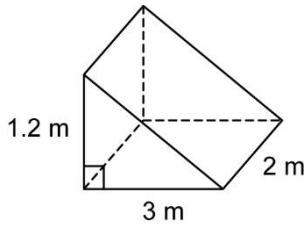


(b)

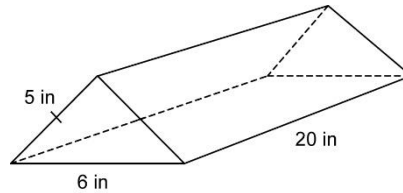


2. Calculate the **volume** of each *triangular* prism. Calculate the **height** first where necessary

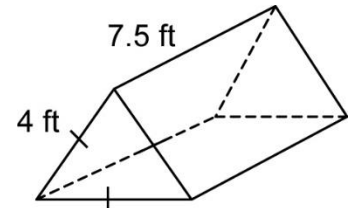
(a)



(b)

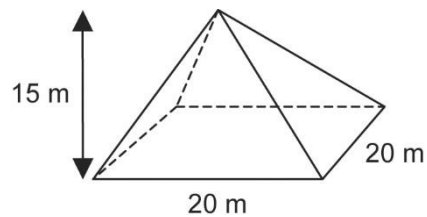


(c)

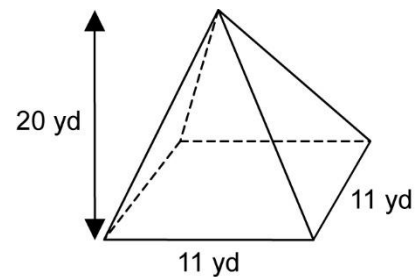


3. Calculate the **volume** of each *pyramid*

(a)



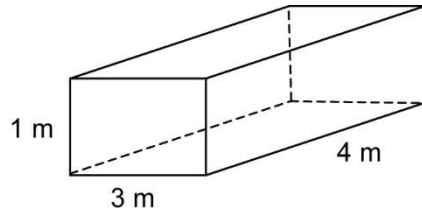
(b)



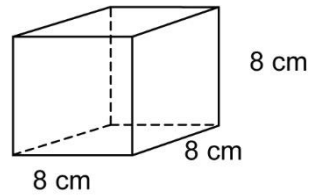
## 9.2 – SURFACE AREA OF PRISMS and PYRAMIDS

1. Calculate the **surface area** of each prism

(a)

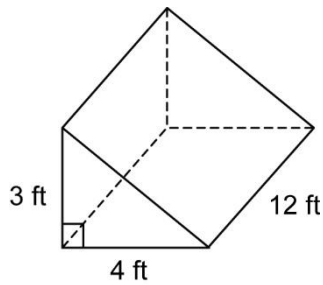


(b)

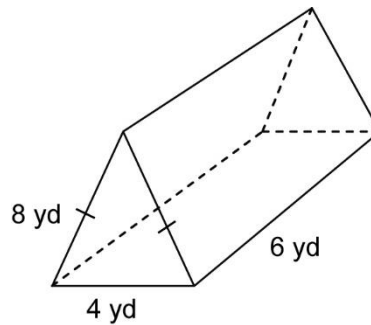


2. Calculate the **surface area** of each prism. Express your answer to the nearest whole number. \*\*\* Calculate the **height** of the triangular face where necessary

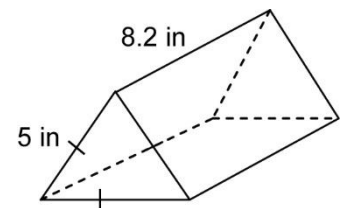
(a)



(b)

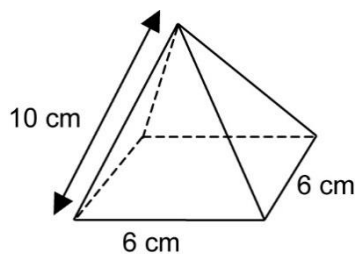


(c)

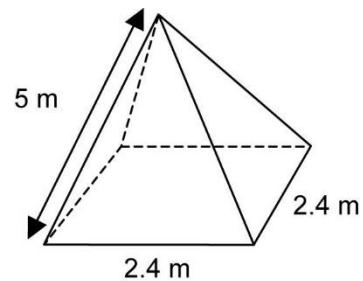


3. Calculate the **surface area** of each pyramid

(a)

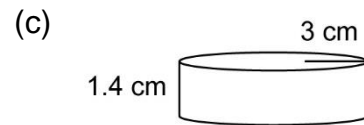
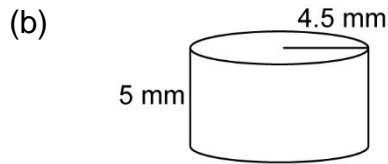
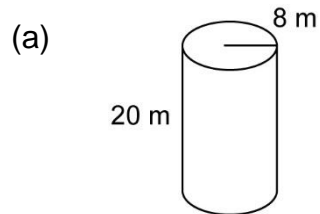


(b)

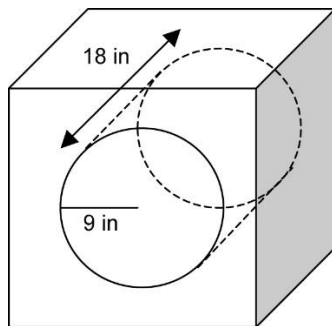


### 9.3 – SURFACE AREA and VOLUME OF CYLINDERS

1. Calculate the **surface area** and **volume** of each cylinder. Express your answer to the nearest whole number



2. A cylindrical drum inside a clothes dryer has a **radius** of **9 in** and **depth (height)** of **18 in**. The clothes dryer is a *cube* where the side lengths are **18 in**. Calculate the **volume** of the clothes dryer if the cylindrical drum is *removed* from it. Express your answer to the nearest whole number

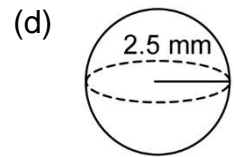
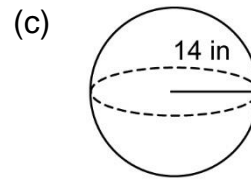
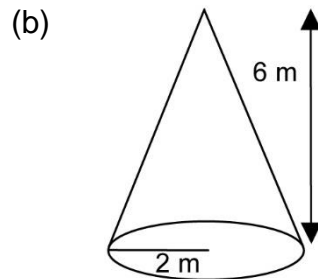
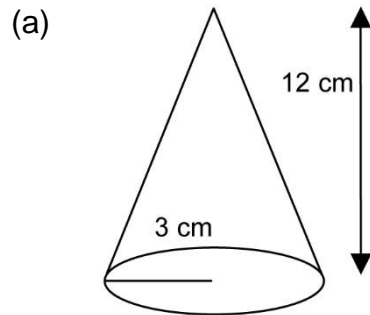


3. (a) A cylinder has a **volume** of **1470.3 cm<sup>3</sup>**. If the **radius** of the cylinder is **6 cm**, what is the measure of the **height**? Express your answer to the nearest whole number

(b) A cylinder has a **volume** of **2010.6 in<sup>3</sup>**. If the **height** of the cylinder is **10 in**, what is the measure of the **radius**?

## 9.4 – VOLUME OF CONES and SPHERES

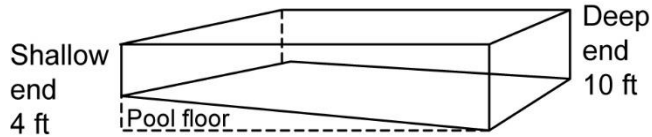
1. Calculate the volume of each **cone** and **sphere**. Express your answers to decimal place



2. Determine the **height** of a *cone* that has a **radius** of **2 cm** and **volume** of **23 cm<sup>3</sup>**. Express your answer to the nearest whole number

### 9.5 – SOLVE PROBLEMS INVOLVING SURFACE AREA and VOLUME

1. This **100 ft** by **40 ft** swimming pool has a shallow end and a deep end. Calculate the **volume** of the water in the pool



2. The Canadian “toonie” consists of two metals fused together. The outer silver ring is made of nickel and the inner gold-coloured core is aluminum bronze. The **diameter** of the entire coin is **28 mm** and its thickness is **1.8 mm**. The **diameter** of the inner core is **18 mm**. Express your answer to the nearest whole number

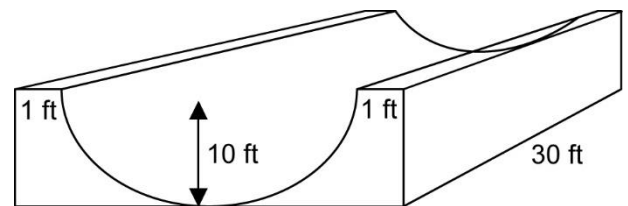
(a) Calculate the **volume** of the aluminum bronze used to make the gold-coloured core



(b) Calculate the **volume** of nickel used to make the silver-coloured ring. \* Hint: This takes a few steps ;)

3. Synergy Corporation designs skateboard ramps. One of their designs is a *semi-cylinder* carved out of a *rectangular prism*

(a) Calculate the **volume** of the curved piece that is removed



Calculate the **volume** of the finished skateboard ramp

## SOLUTIONS

### 9.1

- (a)  $12 \text{ yd}^3$       (b)  $62.5 \text{ ft}^3$
- (a)  $3.6 \text{ m}^3$       (b)  $240 \text{ in}^3$       (c)  $52 \text{ ft}^3$
- (a)  $2000 \text{ m}^3$       (b)  $806.7 \text{ yd}^3$

### 9.2

- (a)  $38 \text{ m}^2$       (b)  $384 \text{ cm}^2$
- (a)  $156 \text{ ft}^2$       (b)  $151 \text{ yd}^2$       (c)  $145 \text{ in}^2$
- (a)  $150.5 \text{ cm}^2$       (b)  $29.1 \text{ m}^2$

### 9.3

- (a) Surface area =  $1407 \text{ m}^2$ , Volume =  $4019 \text{ m}^3$   
(b) Surface area =  $269 \text{ mm}^2$ , Volume =  $318 \text{ mm}^3$   
(c) Surface area =  $83 \text{ cm}^2$ , Volume =  $40 \text{ cm}^3$
- $1252 \text{ in}^3$
- (a)  $13 \text{ cm}$       (b)  $8 \text{ in}$

### 9.4

- (a)  $113.0 \text{ cm}^3$       (b)  $25.1 \text{ m}^3$       (c)  $11494.04 \text{ in}^3$   
(d)  $65.4 \text{ mm}^3$
- $6 \text{ cm}$



## 9.5

1.  $28000 \text{ ft}^3$

2. (a)  $458 \text{ mm}^3$                       (b)  $650 \text{ mm}^3$

3. (a)  $4710 \text{ ft}^3$                       (b)  $1890 \text{ ft}^3$

