

Math 10-C Shape & Space Assignment List

Name: _____

KEY

C1: Measurements

- Human Ruler / Estimating Competition
- Text pg. 13: 10

C2: Conversions

- C2 Conversions Quick Check
- Text pg. 3: 3,4
- Text pg. 6: 2,7
- Text pg. 11: 4-6,11,12

C3: Surface Area

- Derive Surface Area Formulas Chart
- C3 Surface Area Asgn
- Text pg. 25: 1abe,2ac,4,5ad
- Text pg. 25: 1cd,2bd,5bc,6,9,10

C4: Volume

- C4 Volume Asgn
- Text pg. 29: 1ab,3ad
- Text pg. 29: 2ab,3c
- Text pg. 29: 1c, 3b
- Text pg. 29: 5,9-11,18

Review

- Text pg. 13: 4-7, 11-13
- Text pg. 32: 5bcd, 6ac, 11, 12abc

Math 10-C Shape & Space Quick Check
C2 - Conversions

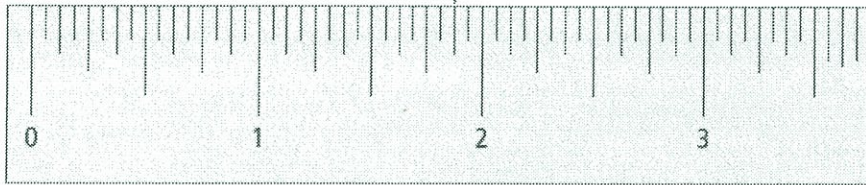
Name: KEY

1. Fill in the blanks.

a. $0.15 \text{ km} = \underline{150} \text{ m}$

b. $650 \text{ cm} = \underline{6.5} \text{ m}$

2. What reading is shown on the Imperial ruler below? Convert this measurement to an appropriate SI unit, rounded to the nearest hundredth.



$1 \frac{7}{8}''$

$1.875'' \cdot \left(\frac{2.54 \text{ cm}}{1''} \right) = \underline{4.76 \text{ cm}}$

3. The height of a standard basketball net is 10 feet. What is the height of a basketball net in metres, rounded to the nearest hundredth of a metre? Show proper calculations with units included.

$10 \text{ ft} \cdot \left(\frac{0.3048 \text{ m}}{1 \text{ ft}} \right) = \underline{3.05 \text{ m}}$

4. A car is travelling 80 mph. What is the speed of the car in kilometres per hour, rounded to the nearest whole number? Show proper calculations with units included.

$80 \text{ mi} \cdot \left(\frac{1.609 \text{ km}}{1 \text{ mi}} \right) = 129 \text{ km}$

$129 \frac{\text{km}}{\text{h}}$

5. What is your height in feet and inches? Determine how tall you are in centimetres.

Answers may vary.

$6' 6''$

$6' \cdot \left(\frac{12 \text{ in}}{1 \text{ ft}} \right) = 72$

$= 72'' + 6''$

$= 78''$

$78'' \cdot \left(\frac{2.54 \text{ cm}}{1 \text{ in}} \right) = \underline{198.12 \text{ cm}}$

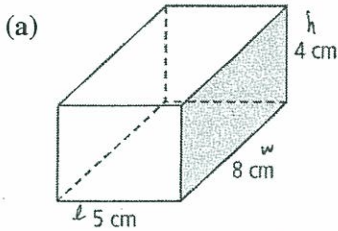
Students can compare their solutions.

Math 10 C: Shape & Space
Surface Area Quick Check

You must show ALL work to receive full marks.

1. Determine the surface area of each of the shapes below.

[2 marks]

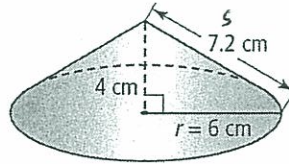


$$SA = 2lw + 2lh + 2wh$$

$$= 2(5)(8) + 2(5)(4) + 2(8)(4)$$

$$= 184 \text{ cm}^2$$

(b)



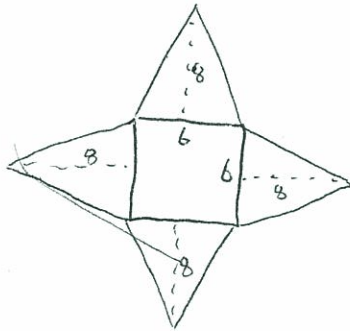
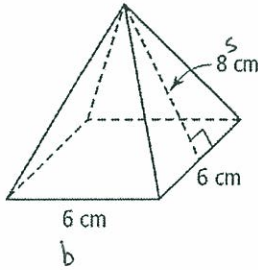
$$SA = \pi r^2 + \pi r s$$

$$= \pi(6)^2 + \pi(6)(7.2)$$

$$= 248.8 \text{ cm}^2$$

2. Sketch the net for the shape below and then calculate the surface area.

[2 marks]



$$SA = b^2 + 4\left(\frac{bs}{2}\right)$$

$$= (6)^2 + 2(6)(8)$$

$$= 132 \text{ cm}^2$$

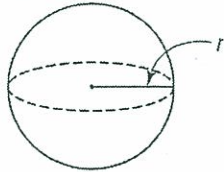
3. The surface area is given for each 3-D object. To the nearest ~~tenth~~ ^{nearest whole unit} of a square unit, determine the missing dimension.

[2 marks]

4. a) 664 cm^2

(a) $SA = 5025 \text{ mm}^2$

b) 414.34 cm^2



$$SA = 4\pi r^2$$

$$5025 = 4\pi r^2$$

$$\sqrt{r^2} = \sqrt{\frac{5025}{4\pi}}$$

$$r = 20.0 \text{ mm}$$

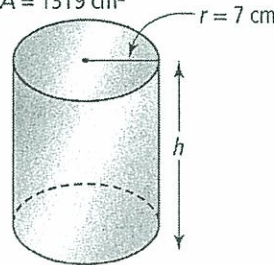
$$r = 20 \text{ mm}$$

5. $58\,307\,960 \text{ mi}^2$

6. 192.3 cm^2

(b)

$SA = 1319 \text{ cm}^2$



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

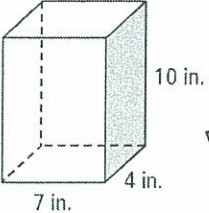
$$h = \frac{SA - 2\pi r^2}{2\pi r}$$

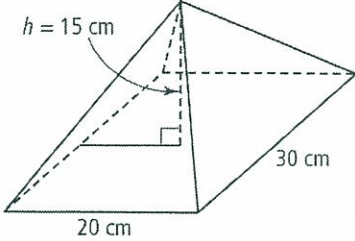
$$h = \frac{1319 - 2\pi(7)^2}{2\pi(7)}$$

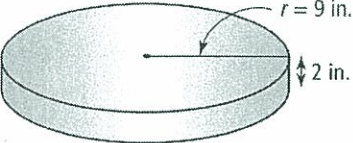
$$h = 23.0 \text{ cm}$$

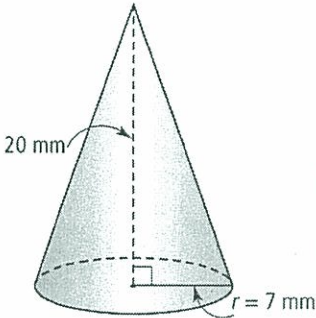
$$h = 23 \text{ cm}$$

1.4 Determine the volume of each 3-D object. Round each answer to the nearest tenth of a cubic unit. (MHR 2.3 BLM)

a)  $V = lwh$
 $V = (7)(4)(10)$
 $V = 280 \text{ in}^3$

b)  $V = \frac{1}{3} lwh$
 $V = \frac{1}{3} (20)(30)(15)$
 $V = 3000 \text{ cm}^3$

c)  $V = \pi r^2 h$
 $V = \pi (9)^2 (2)$
 $V = 508.9 \text{ in}^3$

d)  $V = \frac{1}{3} \pi r^2 h$
 $V = \frac{1}{3} \pi (7)^2 (20)$
 $V = 1026.3 \text{ mm}^3$

2.8 A spherical candy jawbreaker has a diameter of 4 inches. What is the volume of this jawbreaker, rounded to the nearest tenth of a ^{cubic} inch? $r = 2 \text{ in}$

$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi (2)^3$$

$$V = 33.5 \text{ in}^3$$

3.8 A different spherical candy jawbreaker has a volume of 113 in^3 . What is the diameter of this jawbreaker, rounded to the nearest inch?

$$V = \frac{4}{3} \pi r^3 \rightarrow r = \sqrt[3]{\frac{3V}{4\pi}} = \sqrt[3]{\frac{3(113)}{4\pi}}$$

$$r = 3 \text{ in}$$

$$\therefore d = 6 \text{ in}$$

4. 18 cm^3

5. 5.1 m^3

6. 12 ft

7. $621.17 \text{ songs/cm}^3$ (MP3)

0.06 songs/cm^3 (Record)