GRADE 12 APPLIED
UNIT G – PRACTICE PROBLEMS

Name: _____

Adapted from:
Grade11 Essential Distance Learning
M2LE3 Check Your Understanding – Self-Check

1. Shamala runs her own children's toy business. She is currently painting rectangular blocks that are 10 cm long, 7 cm wide and 9 cm tall. What is the area that Shamala is painting for each 'block' (more properly called a rectangular prism!)

2. Determine the lateral surface area of a cylinder with a radius of 4 feet and a height of 3.2 feet to the nearest tenth of a square foot.

(be aware however there really is no such thing as decimal feet in practice! 3.2 feet is closer to 3 ft 2 $\frac{1}{2}$ inches)

3. A square-based pyramid has a surface area of 2400 cm^2. If its base length is 8 cm, what is its slant height?

4. A cylinder has a surface area of 100 sq ft. If its radius is 6 in, what is its height, to the nearest tenth of an inch?

5. A ball has a circumference of 28 in. What is the ball's radius, to the nearest tenth of an inch?

6. Given that 1 in^3 = 0.554 fluid ounces, what is the capacity of this cone to the nearest fluid ounce?

12 in

5 in
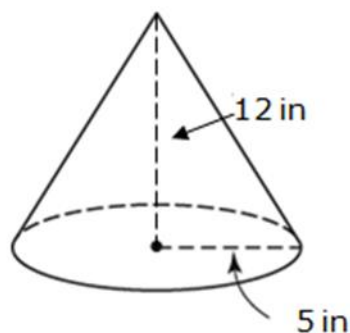
7. A racquetball just fits inside a cube that has an edge length equal to the diameter of the racquetball. The diameter of the racquetball is 5.9 cm. What is the volume of air in the cube to the nearest cubic centimetre?

8. The curved surface area of the cylindrical pipe below is 72.3 cm^2.
Calculate the diameter of the pipe, *d*, to the nearest tenth of a   centimetre.

14.1 cm
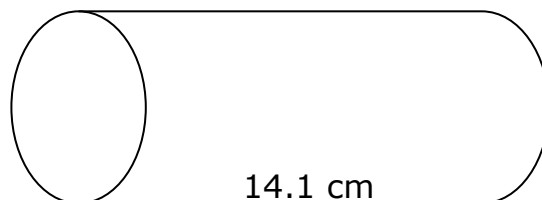
9.   **Paint the Train**

a. A cylindrical tank that carries gasoline by train has
been vandalized by graffiti. The curved area of the tank
needs to be painted before the next shipment of gas goes
out. If the tank is 10 m long and the diameter is 3 m, what
is the surface area that needs to be painted? (ie: the
lateral SA)

b.   The required special paint comes in a 4 litre can and covers 40 m^2. It
costs $113 + taxes (PST 8%; GST 5%). Calculate how much will it cost to
paint.

10. Dylan is building a shed. The shed consists of a square prism with side lengths of 2 m with a square pyramid on top. He has 20 m^2 of sheet metal that he will be using for the sides and the roof but not the door. The door is 1 m by 1.5 m.

a.   Determine if he has enough sheet metal for the shed if the slant height of the roof is 1.5 m?

b.   If sheet metal costs $7.95 per square foot (ft^2) calculate how much he had spent on the 20 m^2 of sheet metal he has now. Add taxes of 8% PST and 5% GST.

11. Erica has been put siding on her house. Each piece of siding is 20cm by 2m and she used 1344 pieces of siding. Erica did not cover the windows and doors, which have a total surface area of 7.2 m^2. What is the total surface area of Erica's house?

ANSWERS

1. 446 cm^2	2. 80.4 ft^2
3. slant height = 146 cm	4. h = 31.3 ft
5. r = 4.5 in	6. 314.16in^3 so 174 fluid ounces
7. 98 cm^3 or 98 cc or 98ml	8. diameter = 1.6 cm
9. a. Lateral SA = 94.25 m^2 b. Need 3 cans! Can't buy a fraction of a can! So $383.07 to paint the train.	10. a. Needs 20.5 m^2, so he does not have enough! b. 20.5 m^2 = 220.55 ft^2; so the value is $1981.31. Most people would just say $2,000.
11. SA for siding = 544.8m^2	