Gr 8 Math Test Review

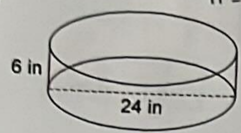
Name Key

Cylinders & Pythagorean Theorem

Date

Find the surface area & Volume of each figure. Round to the nearest tenth. Show formula and all calculations.

1) r = 12 in, H = 6 in



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

$= 2 \times 3.14 \times (12)^2 + 2 \times 3.14 \times 12 \times 6$

$= 2 \times 3.14 \times 144 + 2 \times 3.14 \times 12 \times 6$

$= 904.32\ in^2 + 452.16\ in^2$

$= \boxed{1356.48\ in^2}$

$V = A_o \times H$

$= \pi r^2 \times H$

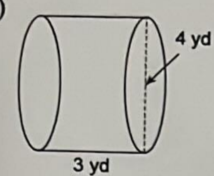
$= 3.14 \times (12)^2 \times 6$

$= \underbrace{3.14 \times 144} \times 6$

$= 452.12 \times 6$

$= \boxed{2712.96\ in^3}$

2)



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

$= 2 \times 3.14\ (2yd)^2 + 2 \times 3.14\ (2yd)($

$= 2 \times 3.14\ (4yd^2) + 2 \times 3.14 \times 2yd$

$= 25.12 yd^2 + 37.68\ y$

$= \boxed{62.8\ yd^2}$

$A_o = \pi r^2$

$= 3.14 \times (2yd)^2$

$= 3.14 \times 4yd^2$

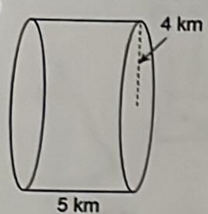
$= 12.56\ yd^2$

$Vol = A_o \times H$

$12.56 yd^2 \times 3yd$

$= \boxed{37.68 yd^3}$

3)



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

$= 2 \times 3.14 \times (4)^2 + 2 \times 3.14 \times 4 \times 5$

$= 2 \times 3.14 \times 16 + 2 \times 3.14 \times 4 \times 5$

$= \underline{100.48\ km^2} + \underline{125.6\ km^2}$

$= \boxed{226.08\ km^2}$

$A_o = \pi r^2$

$= 3.14 \times (4\ km)^2$

$= 3.14 \times 16 km^2$

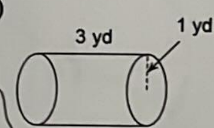
$= 50.24\ km^2$

$Vol = A_o \times H$

$= 50.24\ km^2 \times 5\ km$

$= \boxed{251.2\ km^3}$

4)



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

$= 2 \times 3.14 \times (1)^2 + 2 \times 3.14 \times 1 \times$

$= 2 \times 3.14 \times 1 + 2 \times 3.14 \times 1$

$= 6.28 yd^2 + 18.84y$

$= \boxed{25.12 yd^2}$

$A_o = \pi r^2$

$3.14 \times (1)^2$

3.14×1

$= 3.14\ yd^2$

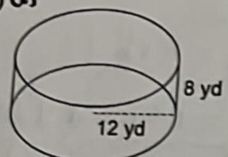
$Vol = A_o \times H$

$= 3.14 yd^2 \times 3y$

$= \boxed{9.42 yd^3}$

Find the surface area of the curved surface only

5) a)



Curved surface

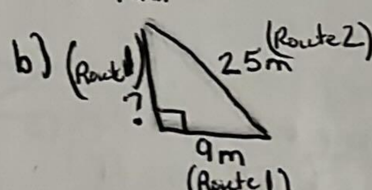
$2\pi r H$

$= 2 \times 3.14 \times 12yd \times 8yd$

$= \boxed{602.88\ yd^2}$

Find out how much you get paid for each Route

b)



$a^2 = c^2 - b^2$

$= (25)^2 - (9)^2$

$a^2 = 625 - 81$

$a^2 = 544$

$a \approx \sqrt{544}$

$a \approx 23$

a) Route 2 pays $21/m

b) Route 1 pay $18/m

c) Who pays more ???

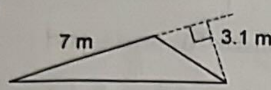
a) 25m × $21/m = $525

b) 23.3yd + 9m = 32.3 m × $18/m = $581

c) Route 1 is higher pay

Find the area of each.

6)



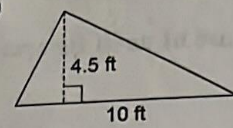
$A_\Delta = \frac{b \times h}{2}$

$= \frac{7m \times 3.1m}{2}$

$= \frac{21.7m^2}{2}$

$\boxed{A_\Delta = 10.85m^2}$

7)



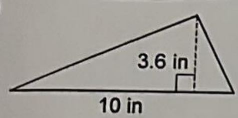
$A_\Delta = \frac{b \times h}{2}$

$= \frac{10ft \times 4.5ft}{2}$

$= \frac{45ft^2}{2}$

$\boxed{A_\Delta = 22.5ft^2}$

8)



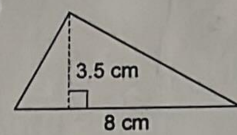
$A_\Delta = \frac{b \times h}{2}$

$= \frac{10in \times 3.6in}{2}$

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

$\boxed{= 18in^2}$

9)



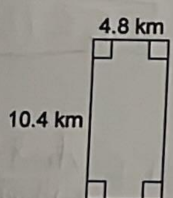
$A_\Delta = \frac{b \times h}{2}$

$= \frac{8cm \times 3.5cm}{2}$

$= \frac{28cm^2}{2}$

$\boxed{A_\Delta = 14cm^2}$

10)

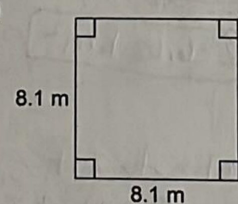


$A_\square = b \times h$

$= 10.4km \times 4.8km$

$= \boxed{49.92\ km^2}$

11)

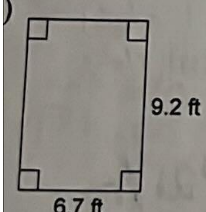


$A_\square = b \times h$

$= 8.1m \times 8.1m$

$\boxed{= 65.61\ km^2}$

)

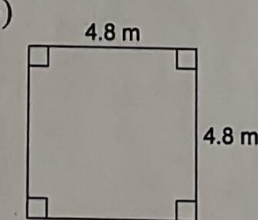


$A_\square = b \times h$

$= 6.7ft \times 9.2ft$

$\boxed{= 6664\ ft^2}$

13)



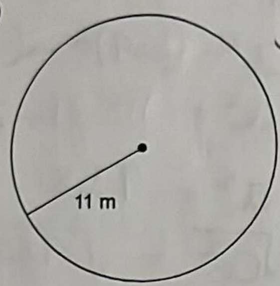
$A_\square = b \times h$

$= 4.8m \times 4.8m$

$\boxed{= 23.04m^2}$

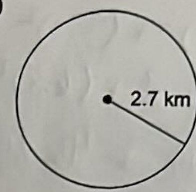
Find the area of each. Round your answer to the nearest tenth.

14)



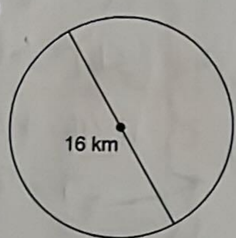
$A_o = \pi r^2$
$= 3.14 \times (11m)^2$
$= 3.14 \times 121\,m^2$
$\boxed{= 379.94\ m^2}$

15)



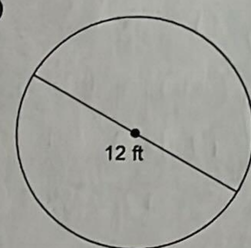
$A_o = \pi r^2$
$= 3.14 \times (2.7\,Km)^2$
$= 3.14 \times 7.29\ km^2$
$= \boxed{22.786\,km^2}$

16)



$A_o = \pi r^2$
$= 3.14 \times 8k$
$= 3.14 \times\ \ km^2$
64
$\boxed{=\ \ m^2}$
200.96

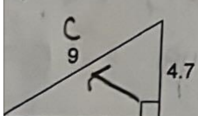
17)



$A_o = \pi r^2$
$= 3.14 \times (6ft)^2$
$= 3.14 \times 36ft^2$
$\boxed{= 113.04\ ft^2}$

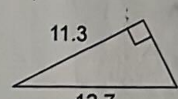
Find each missing length to the nearest tenth.

18)



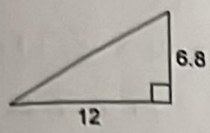
$a^2 = c^2 - b^2$
$a^2 = (9)^2 - (4.7)^2$
$a^2 = 81 - 22.09$
$a^2 = 58.91$
$\sqrt{a^2} = \sqrt{58.91}$
$\boxed{a \approx 7.7}$

19)



$a^2 = c^2 - b^2$
$a^2 = (12.7)^2 - (11.3)^2$
$a^2 = 161.29 - 127.69$
$a^2 = 33.6$
$\sqrt{a^2} = \sqrt{33.6}$
$\boxed{a \approx 5.8}$

20)



$c^2 = a^2 + b^2$

$c^2 = (\ \ )^2 + (\ \ )^2$

$c^2 = (12)^2 + (6.8)^2$

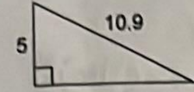
$c^2 = 144 + 46.24$

$c^2 = 190.24$

$\sqrt{c^2} = \sqrt{190.24}$

$\boxed{c \approx 13.8}$

21)



$a^2 = c^2 - b^2$

$a^2 = (10.9)^2 - (5)^2$

$a^2 = 118.81 - 25$

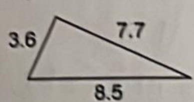
$a^2 = 93.81$

$\sqrt{a^2} = \sqrt{93.81}$

$\boxed{a \approx 9.7}$

Do the following lengths form a right triangle?

22)



$c^2 \ \} \ a^2 + b^2$

$(8.5)^2 \ \} \ (3.6)^2 + (7.7)^2$

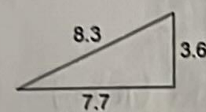
$72.25 \quad 12.96 + 59.29$

72.25

Same

Right Δ

23)



$c^2 \ \} \ a^2 + b^2$

$(8.3)^2 \ \} \ (3.6)^2 + (7.7)^2$

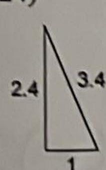
$68.89 \quad 12.96 + 59.29$

72.25

Different

Not Right Δ

24)



$c^2 \ \} \ a^2 + b^2$

$(3.4)^2 \ \} \ (2.4)^2 + (1)^2$

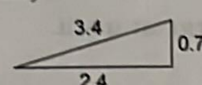
$11.56 \ \} \ 5.76 + 1$

6.76

Different

Not Right Δ

25)



$c^2 \ \} \ a^2 + b^2$

$(3.4)^2 \ \} \ (0.7)^2 + (2.4)^2$

$11.56 \quad 0.49 + 5.76$

6.25

Different

Not Right Δ