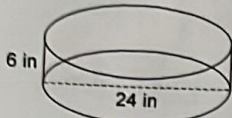


Cylinders & Pythagorean Theorem

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

1) $r = 12 \text{ in}$
 $H = 6 \text{ in}$



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

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

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

$$= 904.32 \text{ in}^2 + 452.16 \text{ in}^2$$

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

$$V = A_0 \times H$$

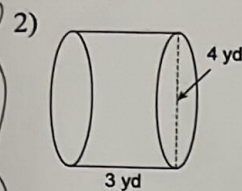
$$= \pi r^2 \times H$$

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

$$= 3.14 \times 144 \times 6$$

$$= 452.12 \times 6$$

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



$$A_0 = \pi r^2$$

$$= 3.14 \times (2 \text{ yd})^2$$

$$= 3.14 \times 4 \text{ yd}^2$$

$$= 12.56 \text{ yd}^2$$

$$Vol = A_0 \times H$$

$$= 12.56 \text{ yd}^2 \times 3 \text{ yd}$$

$$= \boxed{37.68 \text{ yd}^3}$$

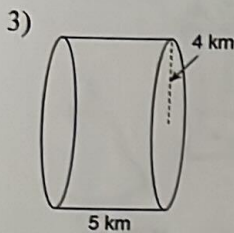
$$SA = 2\pi r^2 + 2\pi r H$$

$$= 2 \times 3.14 \times (2 \text{ yd})^2 + 2 \times 3.14 \times 2 \text{ yd} \times 3$$

$$= 2 \times 3.14 \times (4 \text{ yd}^2) + 2 \times 3.14 \times 2 \text{ yd} \times 3$$

$$= 25.12 \text{ yd}^2 + 37.68 \text{ yd}^2$$

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



$$A_0 = \pi r^2$$

$$= 3.14 \times (4 \text{ km})^2$$

$$= 3.14 \times 16 \text{ km}^2$$

$$= 50.24 \text{ km}^2$$

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

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

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

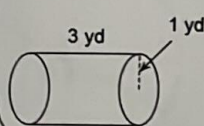
$$= 100.48 \text{ km}^2 + 125.6 \text{ km}^2$$

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

$$Vol = A_0 \times H$$

$$= 50.24 \text{ km}^2 \times 5 \text{ km}$$

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



$$A_0 = \pi r^2$$

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

$$= 3.14 \times 1$$

$$= 3.14 \text{ yd}^2$$

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

$$= 2 \times 3.14 \times (1)^2 + 2 \times 3.14 \times 1 \times 3$$

$$= 2 \times 3.14 \times 1 + 2 \times 3.14 \times 3$$

$$= 6.28 \text{ yd}^2 + 18.84 \text{ yd}^2$$

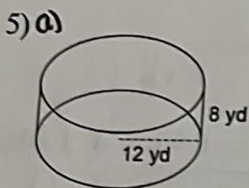
$$= \boxed{25.12 \text{ yd}^2}$$

$$Vol = A_0 \times H$$

$$= 3.14 \text{ yd}^2 \times 3 \text{ yd}$$

$$= \boxed{9.42 \text{ yd}^3}$$

Find the surface area of the curved surface only



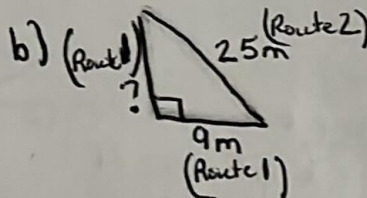
Curved surface

$$2\pi r H$$

$$= 2 \times 3.14 \times 12 \text{ yd} \times 8 \text{ yd}$$

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

Find out how much you get paid for each Route



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

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

$$a^2 = 625 - 81$$

$$a^2 = 544$$

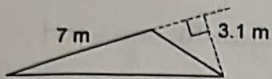
$$a \approx \sqrt{544}$$

- a) Route 2 pays \$21/m
- b) Route 1 pays \$18/m
- c) Who pays more ???

- a) $25 \text{ m} \times \$21/\text{m} = \525
- b) $23.3 \text{ yd} + 9 \text{ m} = 32.3 \text{ m} \times \$18/\text{m} = \$581$
- c) Route 1 is higher pay

Find the area of each.

6)



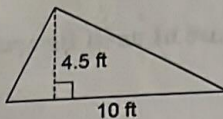
$$A_{\Delta} = \frac{b \times h}{2}$$

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

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

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

7)



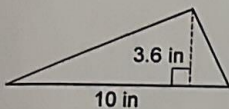
$$A_{\Delta} = \frac{b \times h}{2}$$

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

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

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

8)



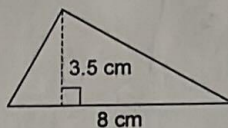
$$A_{\Delta} = \frac{b \times h}{2}$$

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

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

$$A_{\Delta} = 18 \text{ in}^2$$

9)



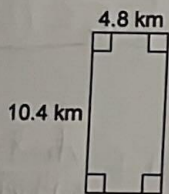
$$A_{\Delta} = \frac{b \times h}{2}$$

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

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

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

10)

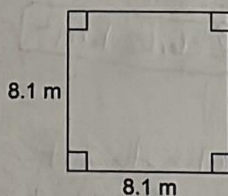


$$A_{\square} = b \times h$$

$$= 10.4 \text{ km} \times 4.8 \text{ km}$$

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

11)

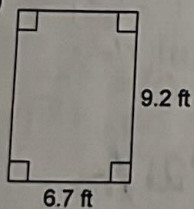


$$A_{\square} = b \times h$$

$$= 8.1 \text{ m} \times 8.1 \text{ m}$$

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

12)

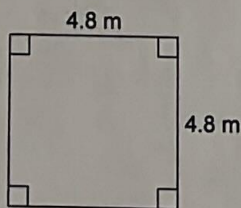


$$A_{\square} = b \times h$$

$$= 6.7 \text{ ft} \times 9.2 \text{ ft}$$

$$= 61.64 \text{ ft}^2$$

13)



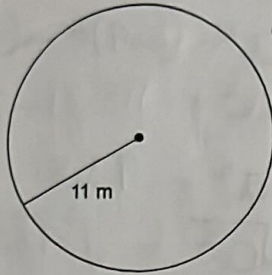
$$A_{\square} = b \times h$$

$$= 4.8 \text{ m} \times 4.8 \text{ m}$$

$$= 23.04 \text{ m}^2$$

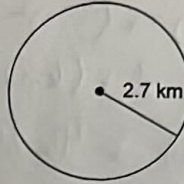
Find the area of each. Round your answer to the nearest tenth.

14)



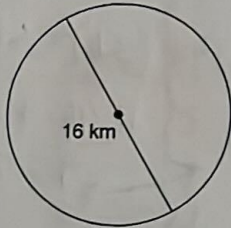
$$\begin{aligned} A_0 &= \pi r^2 \\ &= 3.14 \times (11\text{m})^2 \\ &= 3.14 \times 121\text{m}^2 \\ &= \boxed{379.94\text{m}^2} \end{aligned}$$

15)



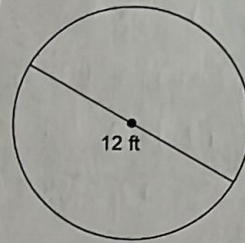
$$\begin{aligned} A_0 &= \pi r^2 \\ &= 3.14 \times (2.7\text{km})^2 \\ &= 3.14 \times 7.29\text{km}^2 \\ &= \boxed{22.786\text{km}^2} \end{aligned}$$

16)



$$\begin{aligned} A_0 &= \pi r^2 \\ &= 3.14 \times (16\text{km})^2 \\ &= 3.14 \times 256\text{km}^2 \\ &= \boxed{803.84\text{km}^2} \end{aligned}$$

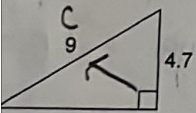
17)



$$\begin{aligned} A_0 &= \pi r^2 \\ &= 3.14 \times (6\text{ft})^2 \\ &= 3.14 \times 36\text{ft}^2 \\ &= \boxed{113.04\text{ft}^2} \end{aligned}$$

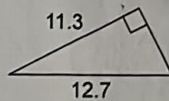
Find each missing length to the nearest tenth.

8)



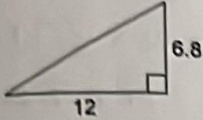
$$\begin{aligned} a^2 &= c^2 - b^2 \\ a^2 &= (9)^2 - (4.7)^2 \\ a^2 &= 81 - 22.09 \\ a^2 &= 58.91 \\ \sqrt{a^2} &= \sqrt{58.91} \\ \boxed{a} &\approx \boxed{7.7} \end{aligned}$$

19)



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

20)



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

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

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

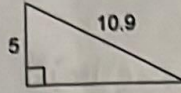
$$c^2 = 144 + 46.24$$

$$c^2 = 190.24$$

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

$$c \approx 13.8$$

21)



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

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

$$a^2 = 118.81 - 25$$

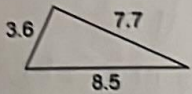
$$a^2 = 93.81$$

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

$$a \approx 9.7$$

Do the following lengths form a right triangle?

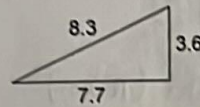
22)



$$c^2 \left\{ \begin{array}{l} a^2 + b^2 \\ (8.5)^2 \\ 72.25 \end{array} \right. \left\{ \begin{array}{l} (3.6)^2 + (7.7)^2 \\ 12.96 + 59.29 \\ 72.25 \end{array} \right.$$

Same
Right Δ

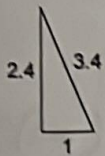
23)



$$c^2 \left\{ \begin{array}{l} a^2 + b^2 \\ (8.3)^2 \\ 68.89 \end{array} \right. \left\{ \begin{array}{l} (3.6)^2 + (7.7)^2 \\ 12.96 + 59.29 \\ 72.25 \end{array} \right.$$

Different
Not Right Δ

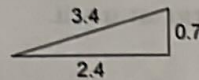
24)



$$c^2 \left\{ \begin{array}{l} a^2 + b^2 \\ (3.4)^2 \\ 11.56 \end{array} \right. \left\{ \begin{array}{l} (2.4)^2 + (1)^2 \\ 5.76 + 1 \\ 6.76 \end{array} \right.$$

Different
Not Right Δ

25)



$$c^2 \left\{ \begin{array}{l} a^2 + b^2 \\ (3.4)^2 \\ 11.56 \end{array} \right. \left\{ \begin{array}{l} (0.7)^2 + (2.4)^2 \\ 0.49 + 5.76 \\ 6.25 \end{array} \right.$$

Different
Not Right Δ