

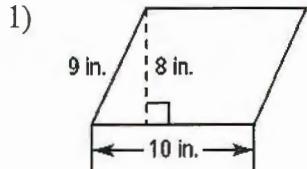
Name Answers

Date \_\_\_\_\_

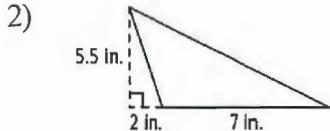
Period \_\_\_\_\_

# Review - Area, Surface Area, Volume, 8.1-8.2

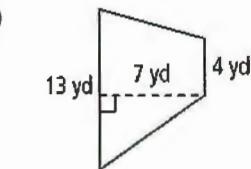
Find the areas of the following. Show work (formula and algebraic steps).



$$\begin{aligned} A &= bh \\ &= 10 \times 8 \\ &= 80 \text{ in}^2 \end{aligned}$$

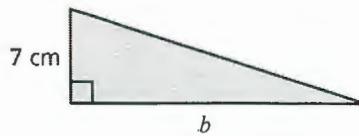
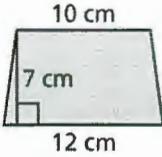


$$\begin{aligned} A &= \frac{1}{2}bh \\ &= \frac{1}{2} \times 7 \times 5.5 \\ &= 19.25 \text{ in}^2 \end{aligned}$$



$$\begin{aligned} A &= \frac{1}{2}(b_1 + b_2)h \\ &= \frac{1}{2}(4 + 13)7 \\ &= \frac{1}{2}(17)7 \\ &= 59.5 \text{ yd}^2 \end{aligned}$$

- 4) The triangle and the trapezoid have the same area. What is the length  $b$  of the triangle?

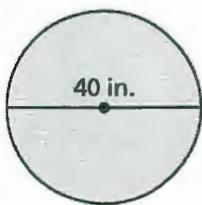


$$\begin{aligned} A &= \frac{1}{2}(b_1 + b_2)h \\ &= \frac{1}{2}(10 + 12)7 \\ &= \frac{1}{2}(22)7 \\ &= 77 \\ &\equiv \boxed{77} \end{aligned}$$

$$\begin{aligned} A &= \frac{1}{2}bh \\ 77 &= \frac{1}{2} \times b \times 7 \\ \frac{77}{3.5} &= \frac{3.5b}{3.5} \\ 22 \text{ cm} &= b \end{aligned}$$

Find the circumference (perimeter) and area of the following. Use 3.14 for  $\pi$ .

5)



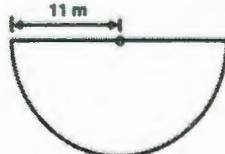
Circumference

$$\begin{aligned} C &= \pi d \\ &= 3.14 \times 40 \\ &= 125.6 \text{ in} \end{aligned}$$

Area

$$\begin{aligned} A &= \pi r^2 \\ &= 3.14 \times 20^2 \\ &= 3.14 \times 400 \\ &= 1256 \text{ in}^2 \end{aligned}$$

6)



Perimeter

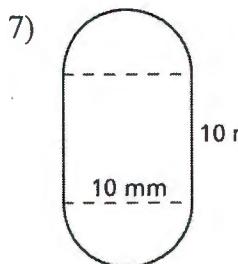
$$\begin{aligned} C &= \pi d \\ &= 3.14 \times 11 \\ &= 69.08 \\ \frac{69.08}{2} &= 34.54 \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= 34.54 + 22 \\ &= \boxed{56.54 \text{ m}} \end{aligned}$$

Area

$$\begin{aligned} A &= \pi r^2 \\ &= 3.14 \times 11^2 \\ &= 3.14 \times 121 \\ &= 379.94 \\ \frac{379.94}{2} &= \boxed{189.97 \text{ m}^2} \end{aligned}$$

Find the perimeter AND area of the following. SHOW ALL WORK.



7)

$$\begin{aligned} C &= \pi d \\ &= 3.14 \times 10 \\ &= 31.4 \\ \text{Total Perimeter} &= 31.4 + 10 + 10 \\ &= \end{aligned}$$

$$P = \underline{\hspace{2cm} 51.4 \text{ mm} \hspace{2cm}}$$

$$\begin{aligned} A_{\text{circle}} &= \pi r^2 \\ &= 3.14 \times 5^2 \\ &= 78.5 \end{aligned}$$

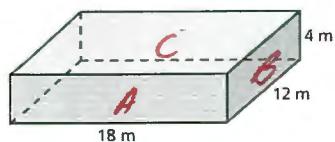
$$\begin{aligned} A_{\text{square}} &= b h \\ &= 10 \times 10 \\ &= 100 \end{aligned}$$

$$\begin{aligned} \text{Total Area} &= 78.5 + 100 \\ &= 178.5 \end{aligned}$$

$$A = \underline{\hspace{2cm} 178.5 \text{ mm}^2 \hspace{2cm}}$$

Find the surface area AND volume of the prisms. Show work (formula and algebraic steps).

8)



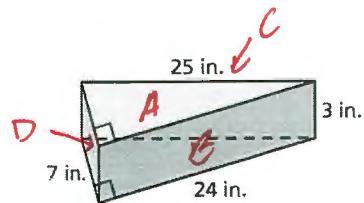
$$\begin{aligned} A &= 72 \times 2 = 144 \\ B &= 48 \times 2 = 96 \\ C &= 216 \times 2 = \underline{\hspace{2cm} 432 \hspace{2cm}} \\ &\quad 672 \end{aligned}$$

$$\begin{aligned} V &= BH \\ &= lwh \\ &= 18 \times 12 \times 4 \\ &= 864 \end{aligned}$$

$$SA = \underline{\hspace{2cm} 672 \text{ m}^2 \hspace{2cm}}$$

$$V = \underline{\hspace{2cm} 864 \text{ m}^3 \hspace{2cm}}$$

9)



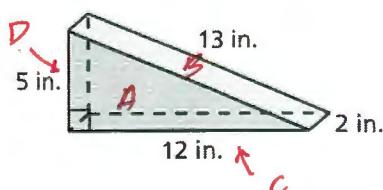
$$\begin{aligned} A &= 87.5 \times 2 = 175 \\ B &= 72 \\ C &= 75 \\ D &= \underline{\hspace{2cm} 343 \hspace{2cm}} \end{aligned}$$

$$SA = \underline{\hspace{2cm} 343 \text{ in}^2 \hspace{2cm}}$$

$$\begin{aligned} V &= BH \\ &= \frac{1}{2} b h \times l \\ &= \frac{1}{2} \times 7 \times 24 \times 3 \\ &= 252 \end{aligned}$$

$$V = \underline{\hspace{2cm} 252 \text{ in}^3 \hspace{2cm}}$$

10)



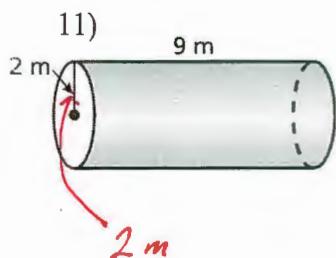
$$\begin{aligned} A &= 30 \times 2 = 60 \\ B &= 26 \\ C &= 24 \\ D &= 10 \\ &\quad \underline{\hspace{2cm} 120 \hspace{2cm}} \end{aligned}$$

$$SA = \underline{\hspace{2cm} 120 \text{ in}^2 \hspace{2cm}}$$

$$\begin{aligned} V &= BH \\ &= \frac{1}{2} b h \times l \\ &= \frac{1}{2} \times 12 \times 5 \times 2 \\ &= 60 \end{aligned}$$

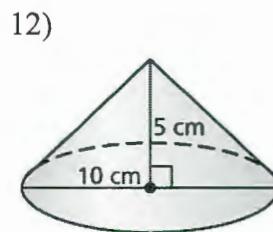
$$V = \underline{\hspace{2cm} 60 \text{ in}^3 \hspace{2cm}}$$

Find the volume of the following. Show work (formula and algebraic steps).



$$\begin{aligned} V &= BH \\ &= \pi r^2 H \\ &= 3.14 \times 2^2 \times 9 \\ &= 113.04 \end{aligned}$$

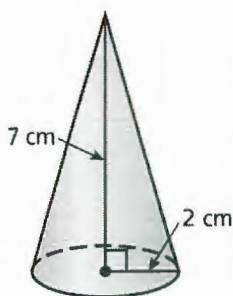
$$V = \underline{113.04 \text{ m}^3}$$



$$\begin{aligned} V &= \frac{1}{3} BH \\ &= \frac{1}{3} \pi r^2 H \\ &= \frac{1}{3} \times 3.14 \times 5^2 \times 5 \\ &= \frac{1}{3} \times 392.5 \\ &= 130.833\ldots \\ &= 130.8 \end{aligned}$$

$$V = \underline{130.8 \text{ cm}^3}$$

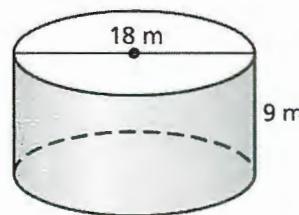
13)



$$\begin{aligned} V &= \frac{1}{3} BH \\ &= \frac{1}{3} \pi r^2 H \\ &= \frac{1}{3} \times 3.14 \times 2^2 \times 7 \\ &= \frac{1}{3} \times 87.92 \\ &= 29.306\ldots \\ &= 29.3 \end{aligned}$$

$$V = \underline{29.3 \text{ cm}^3}$$

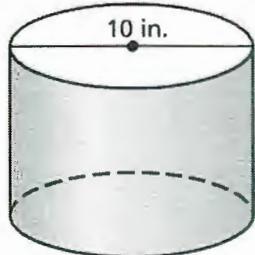
14)



$$\begin{aligned} V &= BH \\ &= \pi r^2 H \\ &= 3.14 \times 9^2 \times 9 \\ &= 2289.06 \end{aligned}$$

$$V = \underline{2289.06 \text{ m}^3}$$

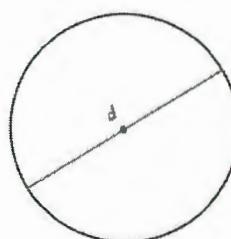
15) Find the height if the volume is 550 in<sup>3</sup>.



$$\begin{aligned} V &= BH \\ &= \pi r^2 H \\ 550 &= 3.14 \times 5^2 \times H \\ \frac{550}{78.5} &= \frac{78.5 \times H}{78.5} \\ 7.006\ldots &= H \end{aligned}$$

$$H = \underline{7 \text{ in}}$$

16) Find the diameter if the area is 153.86 ft<sup>2</sup>.



$$\begin{aligned} A &= \pi r^2 \\ \frac{153.86}{3.14} &= \frac{3.14 \times r^2}{3.14} \\ 49 &= r^2 \end{aligned}$$

$$r = \underline{7}$$

$$h = \underline{7 \text{ in}}$$

$$d = \underline{7 \text{ ft}}$$