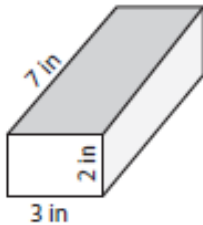


Section 3.2 – Practice Problems

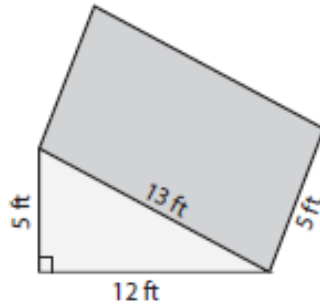
Find the Exact Surface Area of the following shapes, **draw nets** for all but the cones and spheres.
Round to 1 decimal place if necessary.

1)



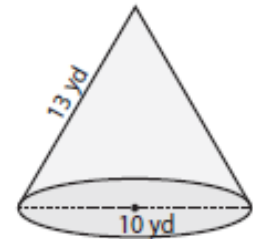
Surface Area = 82 in²

2)

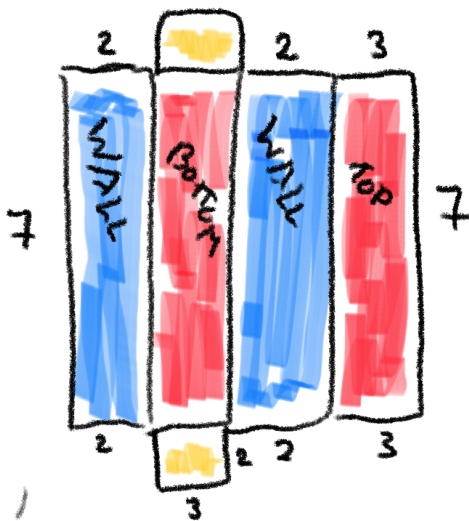


Surface Area = 210 ft²

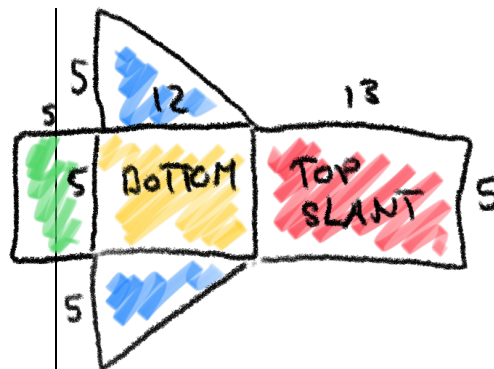
3)



Surface Area = 282.7 yd²



$$\begin{aligned}
 SA &= 2lw + 2lh + 2wh \\
 &= 2(7 \cdot 3) + 2(7 \cdot 2) + 2(2 \cdot 3) \\
 &= 2(21) + 2(14) + 2(6) \\
 &= 42 + 28 + 12 \\
 &= \boxed{82 \text{ in}^2}
 \end{aligned}$$



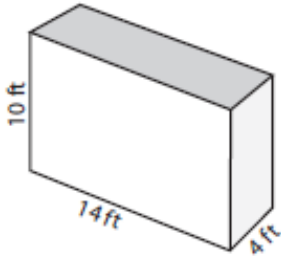
$$\begin{aligned}
 SA &= 12 \cdot 5 + 13 \cdot 5 \\
 &\quad + \left(\frac{12 \cdot 5}{2}\right) \cdot 2 + 25 \\
 &= 60 + 65 + 60 + 25 \\
 &= 210 \text{ ft}^2
 \end{aligned}$$

$$SA_{\text{cone}} = \pi r^2 + \pi r s$$

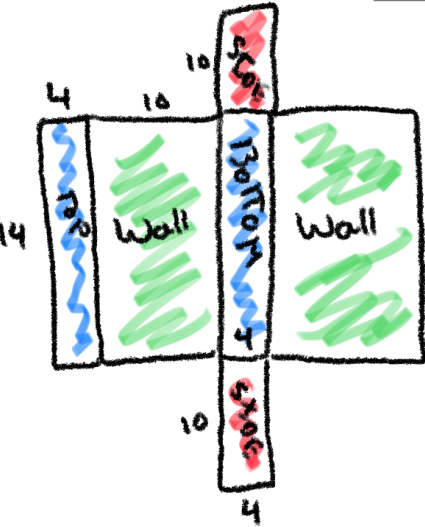
$$\begin{aligned}
 r &= 5 \\
 s &= 13
 \end{aligned}$$

$$\begin{aligned}
 SA &= \pi(5)^2 + \pi(5)(13) \\
 &= 25\pi + 65\pi \\
 &= 90\pi \\
 &= 282.7
 \end{aligned}$$

4)

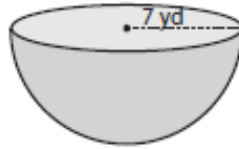


Surface Area = 472 ft^2



$$\begin{aligned}
 SA &= 2(14 \cdot 4) + 2(10 \cdot 4) \\
 &\quad + 2(14 \cdot 10) \\
 &= 2(56) + 2(40) \\
 &\quad + 2(140) \\
 &= 112 + 80 + 280 \\
 &= \boxed{472 \text{ ft}^2}
 \end{aligned}$$

5)



Surface Area = 461.8 yd^2

SA of Sphere

2

Then add
Top to close the
half sphere

SA sphere:

$$\begin{aligned}
 &4\pi r^2 \\
 &4\pi(7)^2 \\
 &196\pi = 615.8 \\
 &\frac{615.8}{2} = 307.9
 \end{aligned}$$

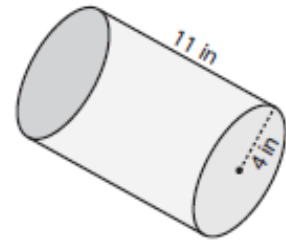
SA of circle top:

$$\begin{aligned}
 \pi r^2 &\rightarrow \pi(7)^2 \\
 49\pi &= 153.9
 \end{aligned}$$

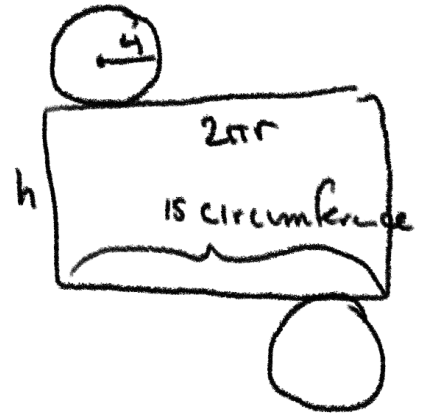
Total = $307.9 + 153.9$

$= \boxed{461.8 \text{ yd}^2}$

6)



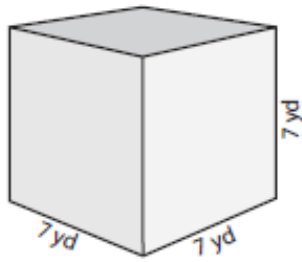
Surface Area = 377.0 m^2



$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2\pi(4)^2 + 2\pi(4)(11) \\
 &= 32\pi + 88\pi \\
 &= 120\pi
 \end{aligned}$$

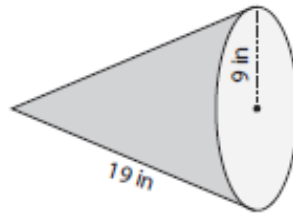
$\boxed{377.0 \text{ m}^2}$

7)



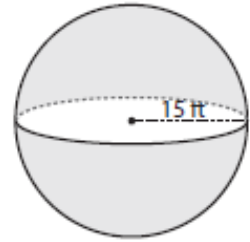
Surface Area = 294 yd²

8)

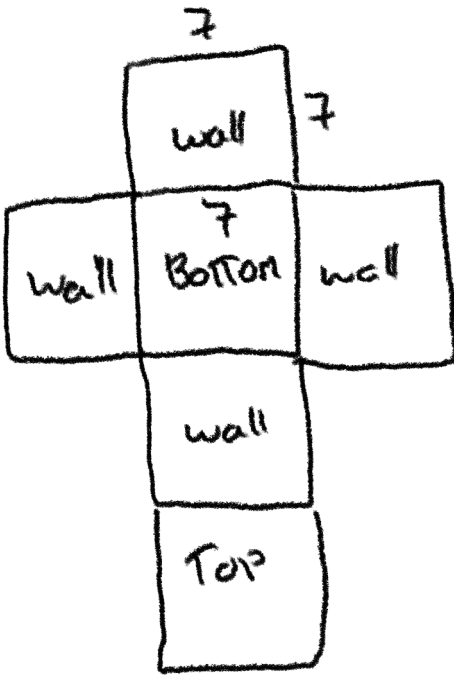


Surface Area = _____

9)



Surface Area = _____



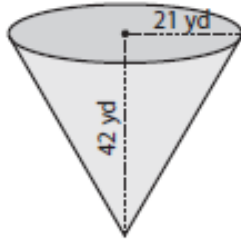
SA of Cube

$$6(s)^2 = 6(7)^2$$

$$6(49) = \boxed{294 \text{ yd}^2}$$

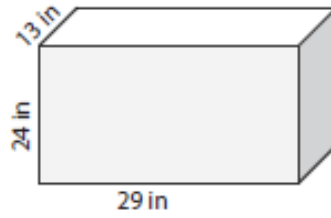
Find the Exact Surface Area of the following shapes. Round to 1 decimal place if necessary.

10)



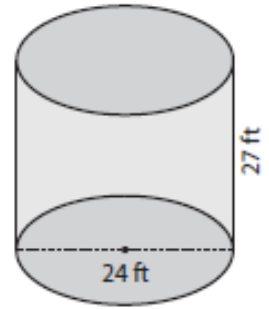
Surface Area = _____

11)



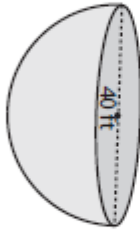
Surface Area = _____

12)



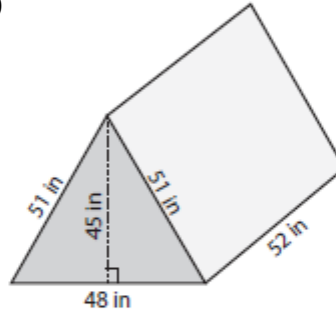
Surface Area = _____

13)



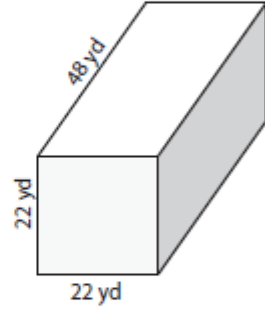
Surface Area = _____

14)



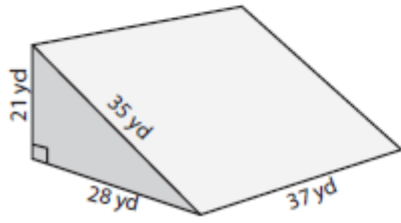
Surface Area = _____

15)



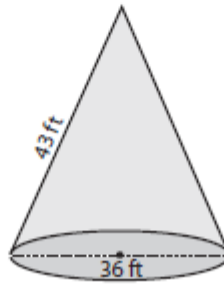
Surface Area = _____

16)



Surface Area = _____

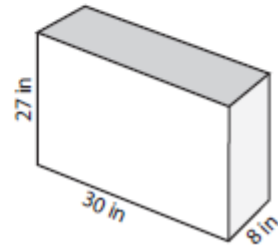
17)



Surface Area = _____

SA:

18)



Surface Area = _____

