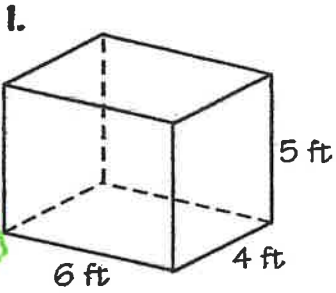
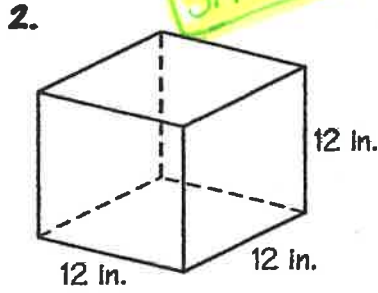


12.7 Surface Area of Prisms + Cylinders Key

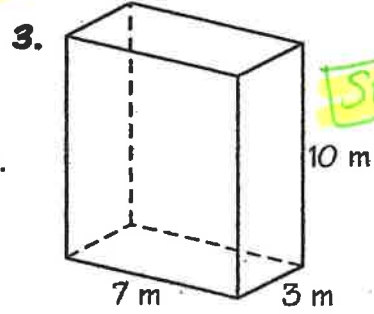
Find the surface area of the prism.



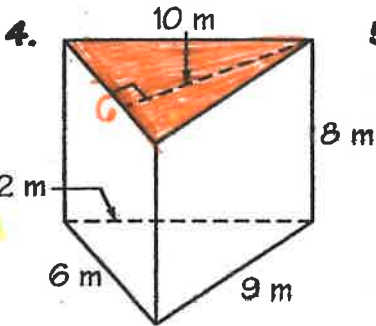
SA = 148 ft²



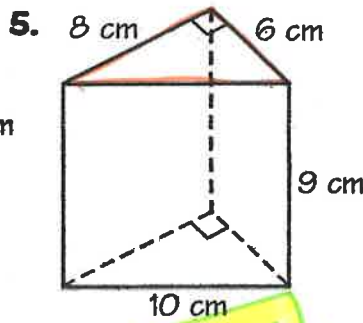
SA = 864 in²



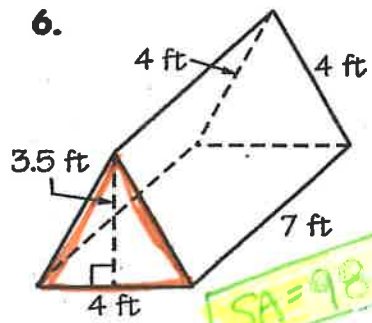
SA = 242 m²



SA = 276 m²

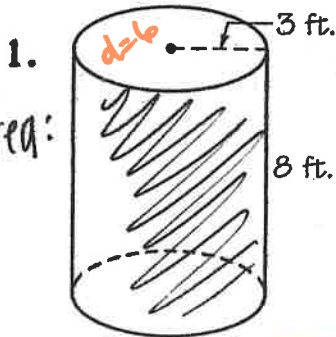


SA = 264 cm²

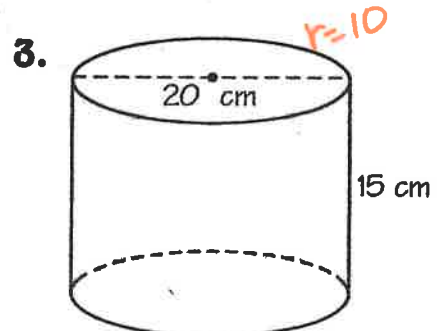
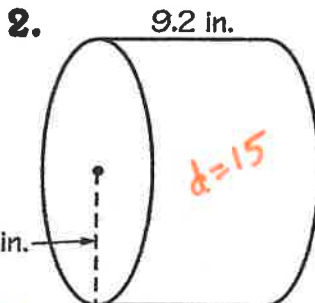


SA = 98 ft²

Find both the lateral area and total surface area of the cylinder.



Lateral Area: Ch



- a. lateral area: 150.72 ft² a. lateral area: 433.32 m² a. lateral area: 942 in²
 b. total area: 207.24 ft² b. total area: 786.57 m² b. total area: 1570 in²

Find the total surface area of the cylinder given the radius (r) or diameter (d) and height (h).

4. r = 5 ft d = 10
h = 12 ft

SA = 533.8 ft²

5. r = 1.6 m d = 3.2
h = 3.5 m

SA = 51.2448 m²

6. d = 18 ft r = 9
h = 7 ft

SA = 904.32 ft²

7. d = 13 cm r = 6.5
h = 2 cm

SA = 346.97 cm²

12.7 Student Practice

$$\textcircled{1} SA = 2B + Ph$$

$$SA = 2(6 \cdot 4) + (6 + 4 + 6 + 4)(5)$$

$$SA = 48 + 100$$

$$SA = 148 \text{ ft}^2$$

$$\textcircled{2} SA = 2B + Ph$$

$$SA = 2(12 \cdot 12) + (12 + 12 + 12 + 12)(2)$$

$$SA = 288 + 576$$

$$SA = 864 \text{ in}^2$$

#3

$$\textcircled{4} SA = 2B + Ph$$

$$SA = 2\left(\frac{1}{2}(6)(10)\right) + (9 + 12 + 6)(8)$$

$$SA = 2(30) + (27)(8)$$

$$SA = 60 + 216$$

$$SA = 276 \text{ m}^2$$

$$\textcircled{5} SA = 2B + Ph$$

$$SA = 2\left(\frac{1}{2}(8)(6)\right) + (8 + 6 + 10)(9)$$

$$SA = 2(24) + (24)(9)$$

$$SA = 48 + 216$$

$$SA = 264 \text{ cm}^2$$

$$\textcircled{3} SA = 2B + Ph$$

$$SA = 2(7 \cdot 3) + (7 + 3 + 7 + 3)(10)$$

$$SA = 2(21) + (20)(10)$$

$$SA = 42 + 200$$

$$SA = 242 \text{ m}^2$$

$$\textcircled{6} SA = 2B + Ph$$

$$SA = 2\left(\frac{1}{2}(4)(3.5)\right) + (4 + 4 + 4)(7)$$

$$SA = 2(7) + (12)(7)$$

$$SA = 14 + 84$$

$$SA = 98 \text{ ft}^2$$

127 Student practice (cont.)

$$\textcircled{1} SA = 2B + Ch$$

$$SA = 2(\pi r^2) + (\pi d)h$$

$$SA = 2(3.14(3)^2) + (3.14(6))(8)$$

$$SA = 2(28.26) + (18.84)(8)$$

$$SA = 56.52 + 150.72$$

$$SA = 207.24 \text{ ft}^2$$

$$\textcircled{2} SA = 2B + Ch$$

$$SA = 2(\pi r^2) + (\pi d)h$$

$$SA = 2(3.14(7.5)^2) + (3.14(15))(9.2)$$

$$SA = 2(176.625) + (47.1)(9.2)$$

$$SA = 353.25 + 433.32$$

$$SA = 786.57 \text{ in}^2$$

$$\textcircled{3} SA = 2B + Ch$$

$$SA = 2(\pi r^2) + (\pi d)h$$

$$SA = 2(3.14(10)^2) + (3.14(20))(15)$$

$$SA = 2(314) + (62.8)(15)$$

$$SA = 628 + 942$$

$$SA = 1570 \text{ in}^2$$

$$\textcircled{4} SA = 2B + Ch$$

$$SA = 2(\pi r^2) + (\pi d)h$$

$$SA = 2(3.14(5)^2) + (3.14(10))(12)$$

$$SA = 2(78.5) + (31.4)(12)$$

$$SA = 157 + 376.8$$

$$SA = 533.8 \text{ ft}^2$$

$$\textcircled{5} SA = 2B + Ch$$

$$SA = 2(\pi r^2) + (\pi d)h$$

$$SA = 2(3.14(1.6)^2) + (3.14)(3.2)(3.5)$$

$$SA = 2(8.0384) + (10.9968)(3.5)$$

$$SA = 16.0768 + 38.4888$$

$$SA = 54.5656 \text{ m}^2$$

$$\textcircled{6} SA = 2B + Ch$$

$$SA = 2(\pi r^2) + (\pi d)h$$

$$SA = 2(3.14(9)^2) + (3.14)(18)(7)$$

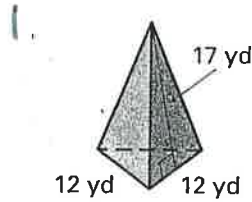
$$SA = 2(254.34) + (56.52)(7)$$

$$SA = 508.68 + 395.64$$

$$SA = 904.32 \text{ ft}^2$$

12.7 Surface Area of Pyramids + Cones hmwk. (Key)

Find the surface area of the regular pyramid.



$$B \approx 62.4 \text{ yd}^2$$

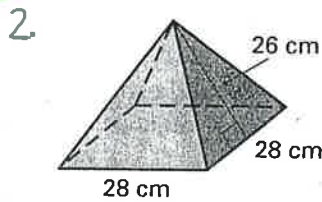
$$SA = B + \frac{1}{2} P l$$

$$SA = 62.4 + \frac{1}{2} (12+12+12)(17)$$

$$SA = 62.4 + \frac{1}{2} (36)(17)$$

$$SA = 62.4 + 306$$

$$SA = 368.4 \text{ yd}^2$$



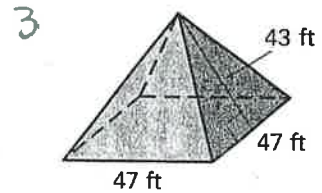
$$SA = B + \frac{1}{2} P l$$

$$SA = (28 \cdot 28) + \frac{1}{2} (28+28+28+28)(26)$$

$$SA = 784 + \frac{1}{2} (112)(26)$$

$$SA = 784 + 1456$$

$$SA = 2240 \text{ cm}^2$$



$$SA = B + \frac{1}{2} P l$$

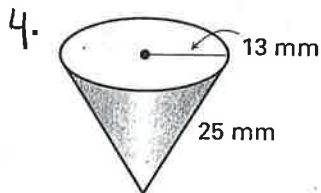
$$SA = (47 \cdot 47) + \frac{1}{2} (47+47+47+47)(43)$$

$$SA = 2209 + \frac{1}{2} (188)(43)$$

$$SA = 2209 + 4042$$

$$SA = 6251 \text{ ft}^2$$

Find the surface area of the cone. Round to the nearest whole number.

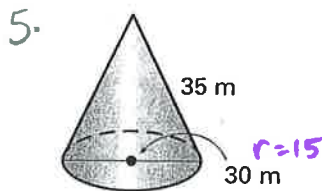


$$SA = \pi r^2 + \pi r l$$

$$SA = \pi (13)^2 + (3.14)(13)(25)$$

$$SA = 530.66 + 1020.5$$

$$SA = 1551.16 \text{ mm}^2$$

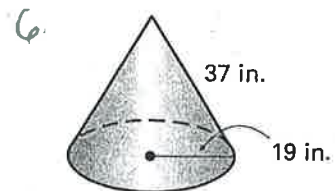


$$SA = \pi r^2 + \pi r l$$

$$SA = (3.14)(15)^2 + (3.14)(15)(35)$$

$$SA = 706.5 + 1648.5$$

$$SA = 2355 \text{ m}^2$$



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

$$SA = 3.14 (19)^2 + (3.14)(19)(37)$$

$$SA = 1133.54 + 2207.42$$

$$SA = 3340.96 \text{ in}^2$$