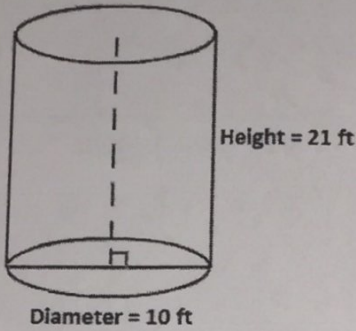


Find the volume of the following figures. Round to the nearest hundredth. Use π

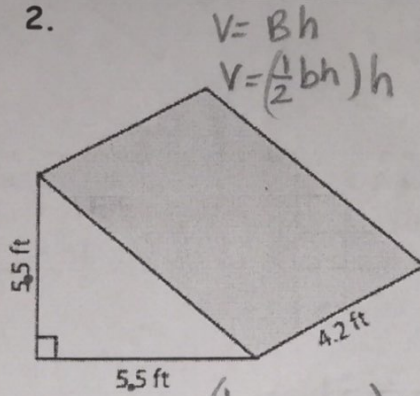
1.



$$r = 5 = \pi 5^2 21$$

$$V = 1649.34 \text{ ft}^3$$

2.



$$V = Bh$$

$$V = \left(\frac{1}{2}bh\right)h$$

$$V = \left(\frac{1}{2} 5.5 \cdot 5.5\right) 4.2$$

$$V = 63.53 \text{ ft}^3$$

3. A conical tank has a radius of 18.3 inches and a height of 48.6 inches. Find the volume of the tank.

$$r = 18.3$$

$$h = 48.6$$

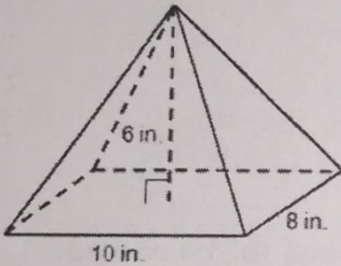
$$V = \frac{1}{3}(\pi r^2)h$$

$$V = 17,043.83 \text{ in}^3$$

$$V = \frac{1}{3}(\pi 18.3^2) 48.6$$

4.

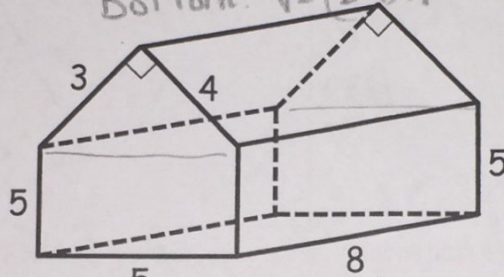
$$V = \frac{1}{3}(Bh)h$$



$$V = \frac{1}{3}(10 \cdot 8) 6$$

$$V = 160 \text{ in}^3$$

5. Top: $V = \left(\frac{1}{2}bh\right)h$
Bottom: $V = (bh)h$



$$V = \left(\frac{1}{2} 4 \cdot 3\right) 8 = 48$$

$$V = 248 \quad V = (5 \cdot 5) 8 = 200$$

6. The diameter of a sphere is 20 yd. Find the volume and round to the nearest hundredths.

$$d = 20 \text{ yd} \rightarrow r = 10 \text{ yd}$$

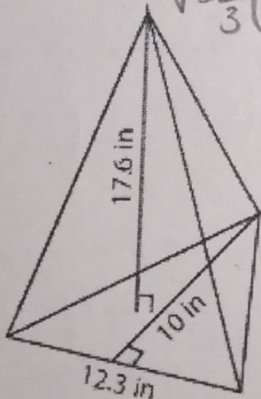
$$V = \frac{4}{3} \pi r^3$$

$$V = \frac{4}{3} \pi 10^3$$

$$V = 4,188.79 \text{ yd}^3$$

7. $V = \frac{1}{3}Bh \rightarrow$

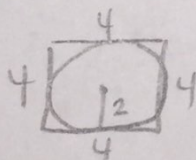
$$V = \frac{1}{3}\left(\frac{1}{2}bh\right)h$$



$$V = \frac{1}{3}\left(\frac{1}{2} \cdot 12.3 \cdot 10\right) 17.6$$

$$V = 360 \text{ in}^3$$

8. A sphere is inscribed in a cube. The cube has a volume of 64 cubic meters. What is the surface area of the sphere?



$$V = 64 \text{ m}^3$$

$$V = s^3$$

$$64 = s^3$$

$$s = 4$$

$$r = 2$$

$$SA = 4\pi r^2 \rightarrow 4\pi 2^2$$

$$SA = 50.27 \text{ m}^2$$

8. Find the missing width of the base.

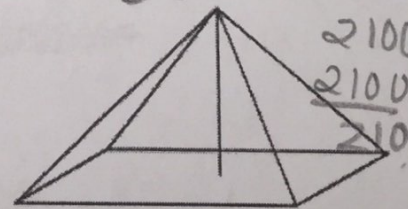
$$V = \frac{1}{3}bh$$

$$\text{Volume} = 700 \text{ ft}^3$$

$$\text{Length} = 30 \text{ ft}$$

$$\text{Height} = 7 \text{ ft}$$

$$3 \cdot 700 = \frac{1}{3}(30 \cdot w) 7 \cdot 3$$



$$2100 = 30w$$

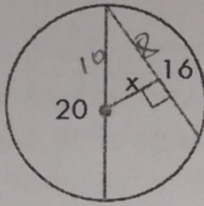
$$\frac{2100}{30} = \frac{30w}{30}$$

$$70 = w$$

$$w = 10$$

$$W = 10 \text{ ft}$$

9. Solve for x.



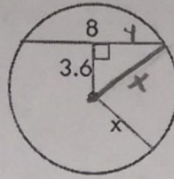
$$8^2 + x^2 = 10^2$$

$$64 + x^2 = 100$$

$$x^2 = 36$$

$$\boxed{x = 6}$$

10. Solve for x. Round to the nearest hundredths.



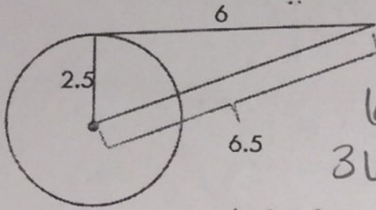
$$4^2 + 3.6^2 = x^2$$

$$16 + 12.96 = x^2$$

$$28.96 = x^2$$

$$\boxed{x = 5.38}$$

11. Determine whether a tangent line is shown. Explain by showing work.

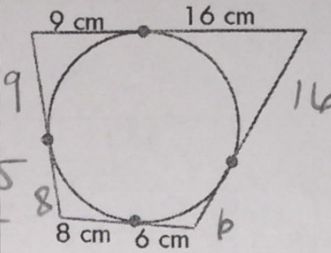


$$6^2 + 2.5^2 = 6.5^2$$

$$36 + 6.25 = 42.25$$

yes $\checkmark 42.25 = 42.25$

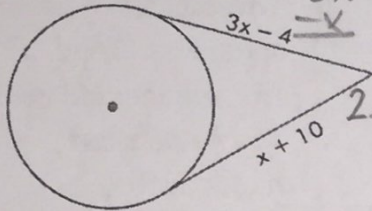
12. Find the perimeter of the polygon.



$$18 + 32 + 12 + 16 =$$

$$\boxed{P = 78 \text{ cm}}$$

13. Solve for x.



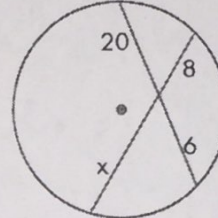
$$3x - 4 = x + 10$$

$$2x - 4 = 10$$

$$\begin{array}{r} +4 \quad +4 \\ \hline 2x = 14 \end{array}$$

$$\boxed{x = 7}$$

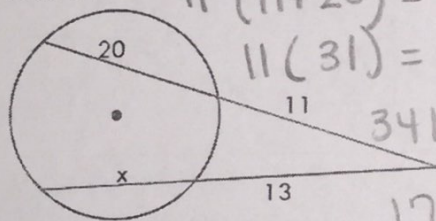
14. Solve for x.



$$\frac{8x}{8} = \frac{120}{8}$$

$$\boxed{x = 15}$$

15. Solve for x and round to the nearest tenth.



$$11(11 + 20) = 13(13 + x)$$

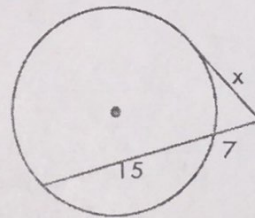
$$11(31) = 169 + 13x$$

$$341 = 169 + 13x$$

$$172 = 13x$$

$$\boxed{x = 13.2}$$

16. Solve for x and round to the nearest tenth.



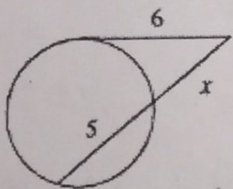
$$x^2 = 7(7 + 15)$$

$$x^2 = 7(22)$$

$$x^2 = 154$$

$$\boxed{x = 12.4}$$

17. Solve for x.



$$6^2 = x(x + 5)$$

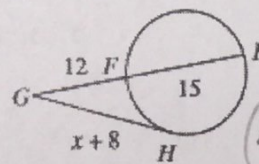
$$36 = x^2 + 5x$$

$$x^2 + 5x - 36 = 0$$

$$(x + 9)(x - 4) = 0$$

$$x = -9 \quad \boxed{x = 4}$$

18. Find HG



$$(x + 8)^2 = 12(12 + 15)$$

$$(x + 8)(x + 8) = 12(27)$$

$$x^2 + 16x + 64 = 324$$

$$x^2 + 16x - 260 = 0$$

$$\begin{array}{r} -10 \quad 26 \\ \hline (x - 10)(x + 26) = 0 \end{array}$$

$$x = 10 \quad x = -26$$

$$\boxed{HG = 18}$$