Area and circumference of circles

$2 \cdot \pi \cdot r$ = Circumference

$$\frac{1133.54}{2} = \frac{2\pi r}{2}$$

$$\frac{566.77}{\pi} = \frac{\pi r}{\pi}$$

$180.5 = r$

$180.5 \cdot 2 = d$

$361 = d$

$$\frac{2\pi r}{2} = \frac{452.16}{2}$$

$$\frac{\pi r}{\pi} = \frac{226.08}{\pi} \rightarrow r = 72$$

$$A = \pi r^2$$

$$\pi(1)^2$$

$$\pi(1) = \boxed{3.14}$$

$d = 2 \qquad \pi(r)^2 = \pi(2/2)^2 = \pi(1)^2$

$$= \pi(1)$$

$$= \boxed{3.14}$$

$$\frac{50.24}{2} = \frac{2\pi r}{2}$$

$$\frac{25.12}{\pi} = \frac{\pi r}{\pi} \rightarrow r = 8$$

$$A = \pi r^2 \Rightarrow \pi(8)^2 \Rightarrow \pi(64) \Rightarrow \boxed{200.96}$$

$A = \pi r^2$

$A = \pi(4)^2 = \pi(16) = 50.24$

$D = 4 \quad r = 4/2 = 2$

$A = \pi r^2 \Rightarrow \pi(2)^2 = \pi(4) = \boxed{12.56}$

$\frac{2\pi r}{2} = \frac{18.84}{2}$

$\frac{\pi r}{\pi} = \frac{9.42}{\pi} \Rightarrow r = 3$

$A = \pi r^2 \Rightarrow \pi(3)^2 = \pi(9) = 28.26$

$r = 5 \quad A = \pi r^2 = \pi(5)^2 = \pi(25)$

Circumference of parts of circles

$r=9 \quad 2 \cdot \pi \cdot r = 2 \cdot \pi \cdot 9 = 56.52$

$\frac{56.52}{2} = 28.26$

$\frac{(2 \cdot \pi \cdot 8)}{4} = \boxed{12.56}$

$(2 \cdot \pi \cdot 5) \cdot 0.75 = 23.55$

$d=10 \quad r = 10/2 = 5$

$\frac{(2 \cdot \pi \cdot 5)}{2} = 15.7$

$r=11 \quad \frac{(2 \cdot \pi \cdot 11)}{2} = \frac{69.08}{2} = \boxed{34.54}$

Area of parts of circles

$A = \pi r^2 = \pi (10)^2 = \pi (100) = 314$

$\frac{314}{4} = 78.5$

$D = 10 \quad r = 5$

$A = \pi (5)^2 = \pi (25) = 78.5$

$\frac{78.5}{2} = \boxed{39.25}$

$r = 4 \quad A = \pi (r)^2 = \pi (4)^2 = \pi (16) = 50.24$

$50.24 \cdot 0.75 = \boxed{37.68}$

$r = 2 \quad A = \pi (r)^2 = \pi (2)^2 = \pi (4) = 12.56$

$\frac{12.56}{2} = 6.28$

Volume of cylinders

$V = Bh$

$B = \pi(r)^2$

$A = \pi r^2 = \pi(2)^2 = \pi(4) = 12.56$

$B = 12.56 \quad h = 8$

$Bh = (12.56)(8) = 100.48$

$A = \pi(r)^2 = \pi(6)^2 = \pi(36) = 113.04$

$B = 113.04 \quad h = 4$

$V = Bh = (113.04)(4) = \boxed{452.16}$

$A = \pi r^2 = \pi(4)^2 = \pi(16) = 50.24$

$B = 50.24 \quad h = 10$

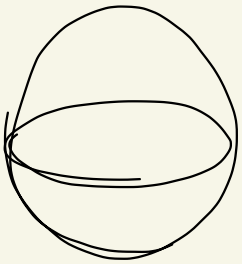
$Bh = (50.24)(10) = \boxed{502.4}$

$A = \pi r^2 = \pi(2)^2 = \pi(4) = 12.56$

$B = 12.56 \quad h = 5$

$Bh = (12.56)(5) = \boxed{62.8}$

Volume of spheres

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

$\frac{4}{3}\pi(9)^3 = 3052.08$

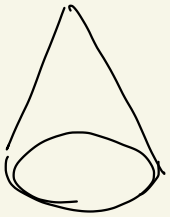
$\frac{4}{3}\pi(7)^3 = \frac{4}{3}\pi(343) = \boxed{\frac{1372}{3}\pi}$

$\frac{4}{3}\pi(2)^3 = \frac{4}{3}\pi(8) = \boxed{\frac{32}{3}\pi}$

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

$$\frac{4}{3}\pi(2)^3 = \frac{4}{3}\pi(8)$$

Volume of Cones



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

$A = \pi r^2 = \pi(5)^2 = 25\pi$

$B = 25\pi \quad h = 3$

$V = \frac{1}{3}(25\pi)(3) = \boxed{25\pi}$

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

$A = \pi r^2 = \pi(6)^2 = \pi(36) = 36\pi$

$B = 36\pi \quad h = 4$

$V = \frac{1}{3} \cdot 36\pi \cdot 4 = \boxed{48\pi}$

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

$$A = \pi r^2 = \pi(5)^2 = 25\pi$$

$$B = 25\pi \quad h = 6$$

$$\frac{1}{3} \cdot 25\pi \cdot 6 = 50\pi$$

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

$$A = \pi r^2 = \pi(2)^2 = 4\pi$$

$$B = 4\pi \quad h = 5$$

$$\frac{1}{3} \cdot 4\pi \cdot 5 = \boxed{\frac{20}{3}\pi}$$

Volume of cylinders, spheres, and cones word problems

$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(15)^3 = 4500\pi$

$\frac{4500\pi}{2} = \boxed{2250\pi}$

$V = \frac{1}{3}Bh$ $\quad \frac{3}{3} - \frac{2}{3} = \frac{1}{3}$

$A = \pi r^2 = \pi(3)^2 = 9\pi$

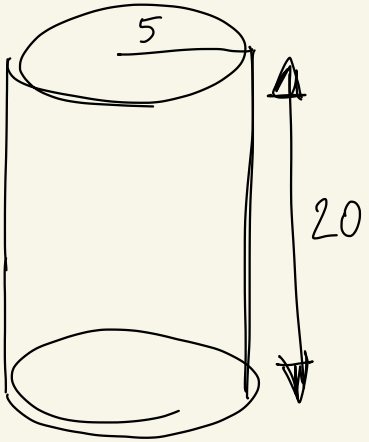
$B = 9\pi \quad h = 8$

$\frac{1}{3} \cdot 9\pi \cdot 8 = 24\pi$

$24\pi \cdot \frac{1}{3} = \boxed{8\pi}$

$$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(30)^3 = \frac{4}{3}\pi(27000)$$

$$= \boxed{36000\pi}$$



$r = 5 \quad h = 20$

$V = Bh$

$B = \pi r^2 = \pi(5)^2 = 25\pi$

$B = 25\pi \quad h = 20$

$Bh = 500\pi$

$Bh = 500 \cdot 3.14$

$Bh = 1570$

$$\frac{4710}{1570} = \boxed{3}$$

Unit Test

$A = \pi r^2 = \pi(14/2 = 7)^2 = \pi(7)^2 = 49\pi$

$\frac{49\pi}{2} = \boxed{\frac{49}{2}\pi}$

$C = 2\pi r = 2\pi(5) = 10\pi$

$\frac{10\pi}{2} = \boxed{5\pi}$

$V = Bh$

$A = \pi r^2 = \pi(3)^2 = 9\pi$

$B = 9\pi \quad h = 2$

$Bh = (9\pi)(2) = \boxed{18\pi}$

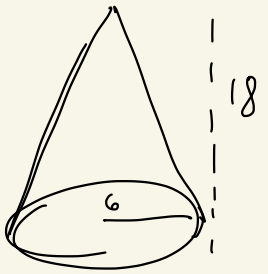
$V = \frac{1}{3}Bh$

$A = \pi r^2 = \pi(3)^2 = 9\pi$

$B = 9\pi \quad h = 2$

$\frac{1}{3}(9\pi)(2) = \boxed{6\pi}$

$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(8)^3 = \frac{2048}{3}\pi$



$h = 18 \quad r = 6$

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

$A = \pi r^2 = \pi(6)^2 = 36\pi$

$B = 36\pi \quad h = 18$

$\frac{1}{3} \cdot 36\pi \cdot 18 = \boxed{216\pi}$

$2\pi r = 2\pi(8) = 16\pi = \boxed{50.24 \text{ units}}$

$V = Bh$

$36\pi = Bh$

$36\pi = (\pi r^2)(h)$

$36\pi = (\pi(3)^2)(h)$

$36\pi = (9\pi)(h)$

$\frac{36\pi}{9\pi} \quad \frac{(9\pi)(h)}{9\pi}$

$4 = h$

$V = \frac{4}{3}\pi(r)^3 = \frac{4}{3}\pi(1)^3 = \frac{4}{3}\pi$

$= \frac{4}{3} \cdot 3.14$

$= \boxed{4.186}$

$D = 4 \quad r = 4/2 = 2$

$C = 2\pi r = 2\pi(2) = 4\pi = 12.56$

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

$A = \pi r^2 = \pi(3)^2 = 9\pi$

$B = 9\pi \quad h = 4$

$\frac{1}{3}(9\pi)(4) = \boxed{12\pi}$

$r = 4 \quad C = 2\pi(r) = 2\pi(4) = 8\pi$

$8\pi \cdot \frac{3}{4} = \frac{24\pi}{4} = \boxed{6\pi}$

$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi\left(\frac{1}{2}\right)^3 = \frac{4}{3}\pi\left(\frac{1}{8}\right)$

$= \boxed{\frac{1}{6}\pi}$

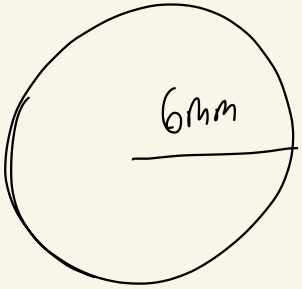
$r = 4 \quad A = \pi r^2 = \pi(4)^2 = \pi(16) = 16\pi$

$\frac{16\pi}{2} = \boxed{8\pi}$

$V = Bh \quad A = \pi r^2 = \pi(4)^2 = \pi(16) = 16\pi$

$B = 16\pi \quad h = 3$

$Bh = 16\pi \cdot 3 = 48\pi$



$$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(6)^3$$

$$= \frac{4}{3}\pi(216)$$

$$= 288\pi$$

$$4 \cdot 288\pi = \boxed{1152\pi}$$

$$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(10)^3 = \frac{4}{3}\pi(1000)$$

$$= \frac{4000}{3}\pi$$

$C = 2\pi r$

$$\frac{113.04}{2} = \frac{2\pi r}{2} \Rightarrow \frac{56.52}{\pi} = \frac{\pi r}{\pi}$$

$18 = r$

$D = r \cdot 2$

$D = 18 \cdot 2$

$\boxed{D = 36}$