

HW 618 1-6, 10-12

9

1. 1715 cm^3

2. $H = 16 \text{ cm}$ $V = 768\pi \text{ cm}^3$ $R = \frac{64}{1}$
 $h = 4 \text{ cm}$ $v = 12\pi \text{ cm}^3$

3. $v = 324$ $V = 1500 \text{ cm}^3$

$$\frac{h}{H} = \frac{3}{5}$$

$$\frac{V}{v} = \frac{125}{27}$$

4. $v = 1944 \pi \text{ ft}^3$

$$\frac{V}{v} = \left(\frac{H}{24}\right)^3 = \frac{64}{27}$$

$$H = 32 \text{ ft}$$

5. $\frac{125}{27}$

6. $2:5$

10. Similar objects

$$\frac{h}{H} \left(\frac{14}{48}\right)^3 = \frac{7}{x} \frac{w}{W} \quad (\text{mass relates to Volume})$$

$$2744x = 774144$$

$x = 282 \rightarrow$ The chicken would weigh about 282 pounds

11. if the frogs are similar size

$$\frac{L}{l} = \frac{W}{w} \left(\frac{0.3}{0.0098}\right)^3 = \frac{3.2}{x}$$

$$9.8 \text{ mm} = 0.0098 \text{ m}$$

$$0.027x = 3.011 \times 10^{-6}$$

$$x = 1.116 \times 10^{-4}$$

$$= 0.0001116 \text{ Kg}$$

$$= \underline{0.116 \text{ g}}$$

12. $\frac{32}{8} = \frac{4}{1} \text{ SA } \left(\frac{4}{1}\right)^2$

SA Ratio is 16:1

Vol. Ratio is 64:1