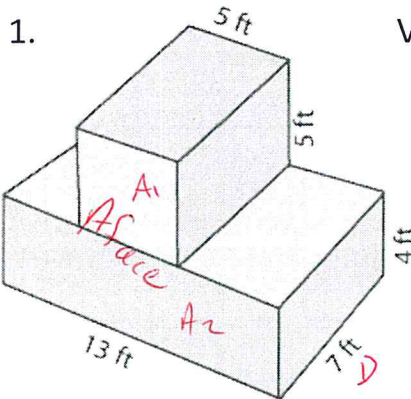


Grade 8 Math – Measurement **Volume of 3D Shapes Composite Shapes**

Name: Key
Class: _____

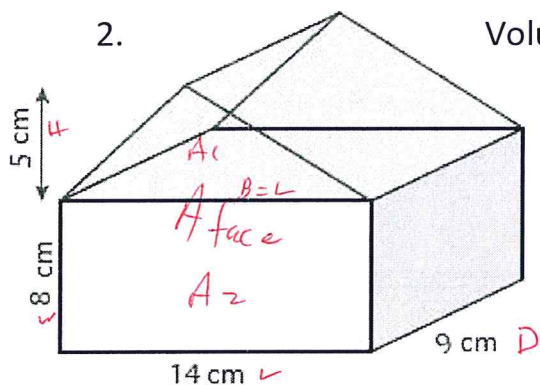
Here are some new questions for volume and space to show your work.



Volume? $V = A_{\text{face}} \times D$
 $= 77 \text{ ft}^2 \times 7 \text{ ft}$
 $= 385 \text{ ft}^3$

$\therefore$ The volume of the composite shape is 385 ft^3 .

$$\begin{aligned} A_{\text{face}} &= A_1 + A_2 \\ &= L \times w + L \times w \\ &= 5 \text{ ft} \times 5 \text{ ft} + 13 \text{ ft} \times 4 \text{ ft} \\ &= 25 \text{ ft}^2 + 52 \text{ ft}^2 \\ &= 77 \text{ ft}^2 \end{aligned}$$



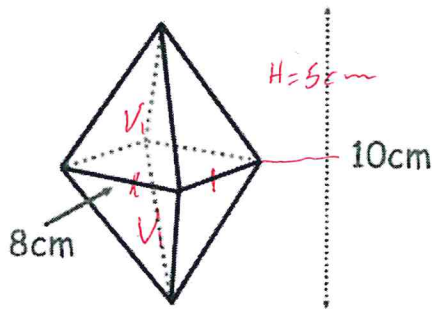
Volume?

$$\begin{aligned} V &= A_{\text{face}} \times D \\ &= 147 \text{ cm}^2 \times 9 \text{ cm} \\ &= 1323 \text{ cm}^3 \end{aligned}$$

$\therefore$ The volume of this composite figure is 1323 cm^3 .

$$\begin{aligned} A_{\text{face}} &= A_1 + A_2 \\ &= \frac{B \times H}{2} + L \times w \\ &= \frac{14 \text{ cm} \times 5 \text{ cm}}{2} + 14 \text{ cm} \times 8 \text{ cm} \\ &= \frac{70 \text{ cm}^2}{2} + 112 \text{ cm}^2 \\ &= 35 \text{ cm}^2 + 112 \text{ cm}^2 \\ &= 147 \text{ cm}^2 \end{aligned}$$

3.



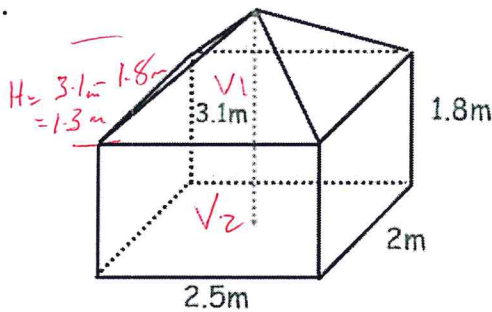
$$\begin{aligned}
 V_1 &= A_{\text{base}} \times H \div 3 \\
 &= L \times W \times H \div 3 \\
 &= 8\text{cm} \times 8\text{cm} \times 5\text{cm} \div 3 \\
 &= 64\text{cm}^2 \times 5\text{cm} \div 3 \\
 &= 320\text{cm}^3 \div 3 \\
 &= 106.\overline{6}\text{cm}^3
 \end{aligned}$$

Volume?

$$\begin{aligned}
 V &= 2V_1 \\
 &= 2(106.\overline{6}\text{cm}^3) \\
 &= 213.\overline{3}\text{cm}^3
 \end{aligned}$$

∴ The volume of this composite shape (dipyramid) is $213.\overline{3}\text{cm}^3$.

4.



$$\begin{aligned}
 V_1 &= A_{\text{base}} \times H \div 3 \\
 &= L \times W \times H \div 3 \\
 &= 2.5\text{m} \times 2\text{m} \times 1.3\text{m} \div 3 \\
 &= 6.5\text{m}^3 \div 3 \\
 &= 2.1\overline{6}\text{m}^3
 \end{aligned}$$

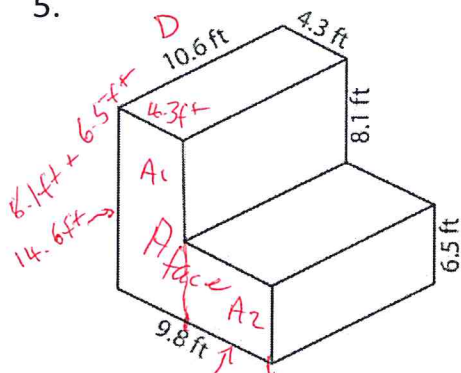
Volume?

$$\begin{aligned}
 V &= V_1 + V_2 \\
 &= 2.1\overline{6}\text{m}^3 + 9\text{m}^3 \\
 &= 11.1\overline{6}\text{m}^3
 \end{aligned}$$

∴ The volume of this composite figure is $11.1\overline{6}\text{m}^3$.

$$\begin{aligned}
 V_2 &= A_{\text{base}} \times H \\
 &= L \times W \times H \\
 &= 2.5\text{m} \times 2\text{m} \times 1.8\text{m} \\
 &= 5\text{m}^2 \times 1.8\text{m} \\
 &= 9\text{m}^3
 \end{aligned}$$

5.



$$\begin{aligned}
 A_{\text{face}} &= A_1 + A_2 \\
 &= L \times W + L \times W \\
 &= 4.3\text{ft} \times 14.6\text{ft} + 9.8\text{ft} \times 6.5\text{ft} \\
 &= 62.78\text{ft}^2 + 35.75\text{ft}^2 \\
 &= 98.53\text{ft}^2
 \end{aligned}$$

Volume?

$$\begin{aligned}
 V &= A_{\text{face}} \times D \\
 &= 98.53\text{ft}^2 \times 10.6\text{ft} \\
 &= 1044.418\text{ft}^3
 \end{aligned}$$

∴ The volume of this composite figure is $\sim 1044.42\text{ft}^3$