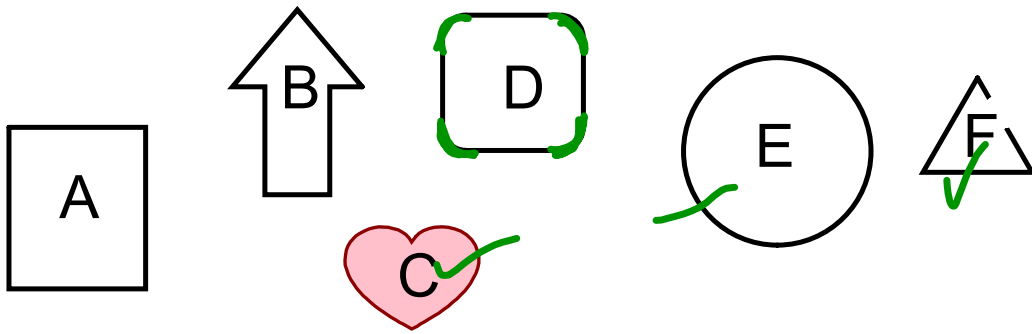



Unit 6 Geometry and Measurement Unit

Sort the polygons by non-polygons and polygons
 → every vertex has 2 straight line attached
 → Straight lines
 → must be closed



Non polygon	Polygon
E → NO straight lines C → F Not closed D → rounded corners no + vertex	A B

Concave Polygon → has at least 1 angle bigger than 180°


Convex Polygon → all angles less than 180°

Irregular Polygon

Regular Polygon →

Polygon -

Non-Polygon -

Congruent Polygons → measure angles
 measure sides
 → if all equal then congruent

$P = S + S + S + S \rightarrow$ how many sides you have
 ↳ unit cm, m, km

$$A_{\square} = L \times w$$

$$L = A \div w$$

$$w = A \div L$$

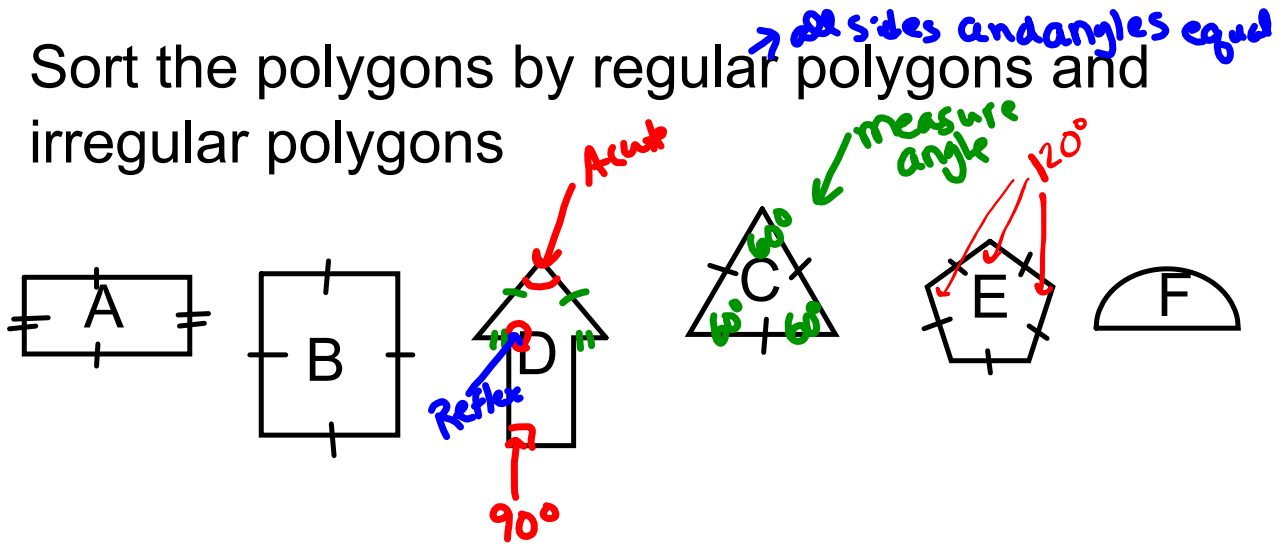
$$V = L \times w \times H$$

$$V = A_{\text{base}} \times H$$

$$A_{\text{base}} = V \div H$$

$$H = V \div A_{\text{base}}$$

Sort the polygons by regular polygons and irregular polygons



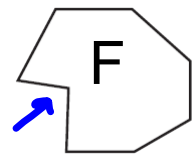
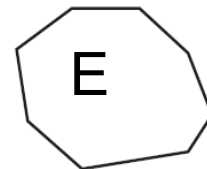
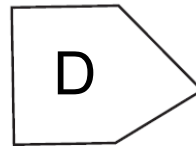
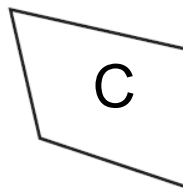
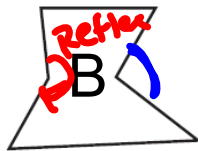
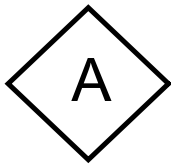
Regular polygon	Irregular Polygon
B C E	A D → Angles and Sides not equal

B
C
E

A
D → Angles and Sides not equal

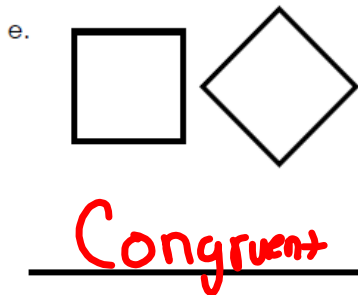
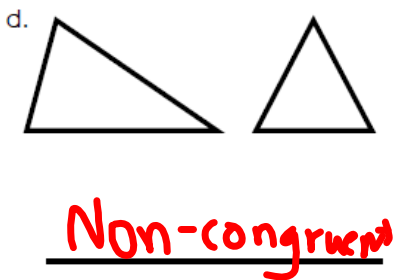
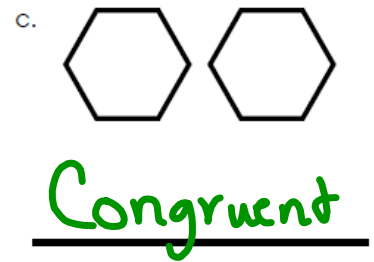
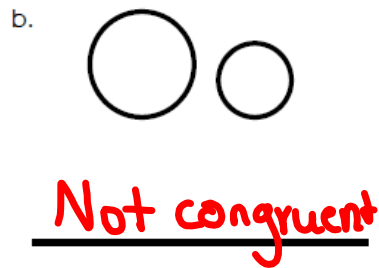
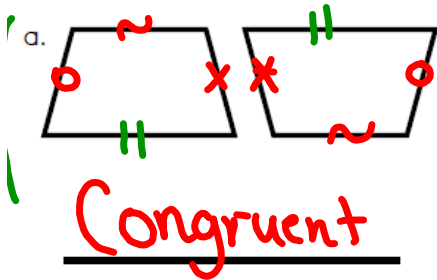
F → is Not a polygon

Sort the polygons by convex polygons and concave polygons

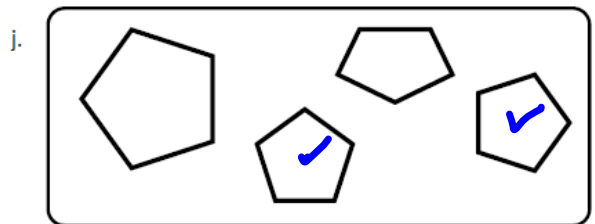
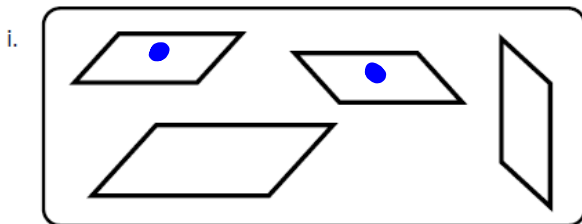
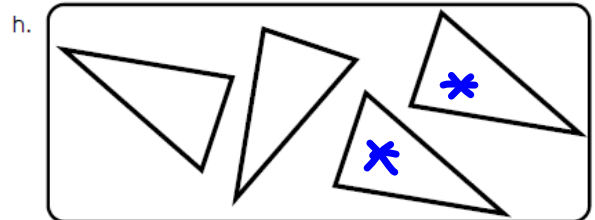
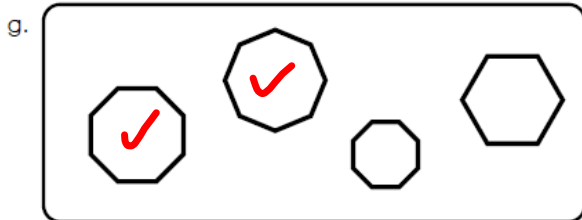


Convex polygon	Concave Polygon
A C D E	B F

Which of the following are congruent or not congruent *Measure all sides and angles OR Tracing Paper*



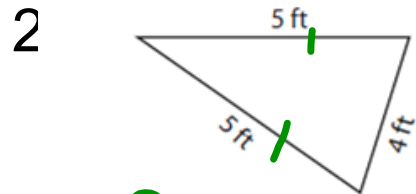
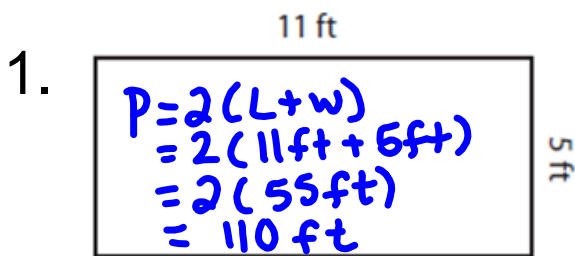
Color all the congruent shapes in each box.



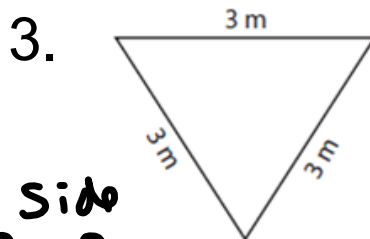
How do you know they are congruent?

Use tracing paper

Find the perimeter



$$\begin{aligned}
 P &= 2(\text{side}) + \text{Bottom} \\
 &= S + S + S \\
 &= 5\text{ft} + 5\text{ft} + 4\text{ft} \\
 &= 14\text{ft}
 \end{aligned}$$

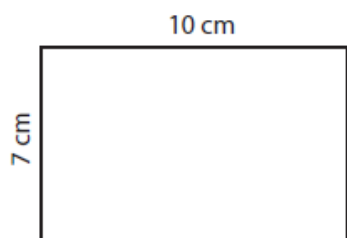


$$\begin{aligned}
 P &= 3 \text{ side} \\
 &= 3 \times 3\text{m} \\
 &= 9\text{m}
 \end{aligned}$$

Find the Area

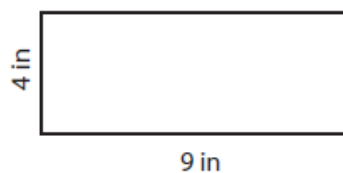
Find the area of each rectangle.

1)



$$\begin{aligned} A &= L \times W \\ &= 7 \text{ cm} \times 10 \text{ cm} \\ &= 70 \text{ cm}^2 \end{aligned}$$

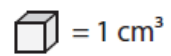
2)



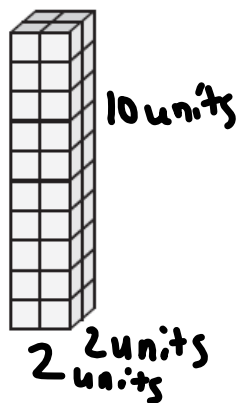
$$\begin{aligned} A &= L \times W \\ &= 4 \text{ in} \times 9 \text{ in} \\ &= 36 \text{ in}^2 \end{aligned}$$

Volume

Count the cubes and find the volume of each rectangular prism.

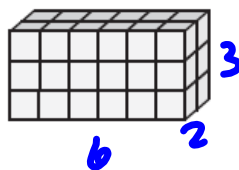


1)



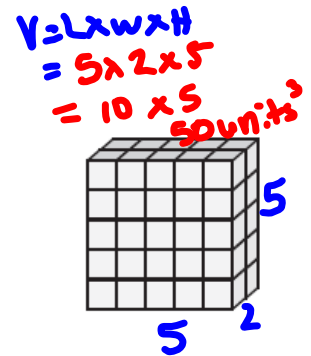
$$\begin{aligned}
 V &= L \times w \times h \\
 &= 2 \text{ units} \times 2 \text{ units} \times 10 \text{ units} \\
 &= \underbrace{4 \text{ unit}^2} \times 10 \text{ units} \\
 &= 40 \text{ units}^3
 \end{aligned}$$

2)



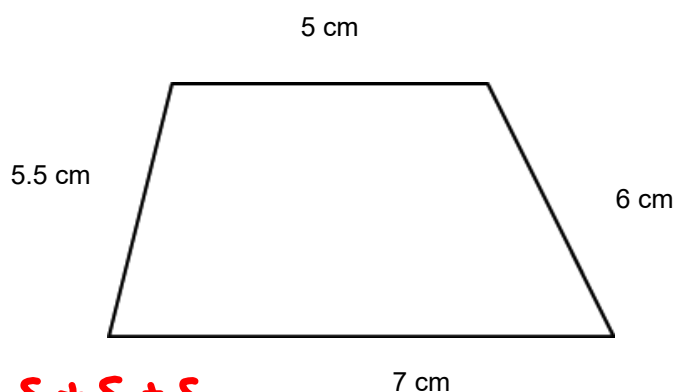
$$\begin{aligned}
 V &= L \times w \times h \\
 &= 6 \text{ units} \times 2 \text{ units} \times 3 \text{ units} \\
 &= \underbrace{12 \text{ unit}^2} \times 3 \text{ units} \\
 &= 36 \text{ unit}^3
 \end{aligned}$$

3)



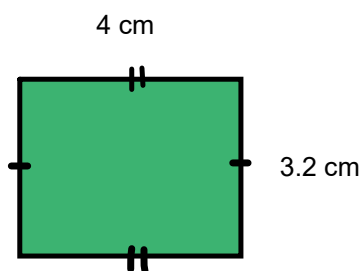
$$\begin{aligned}
 V &= L \times w \times h \\
 &= 5 \times 2 \times 5 \\
 &= 10 \times 5 \\
 &= 50 \text{ units}^3
 \end{aligned}$$

Find the Perimeter



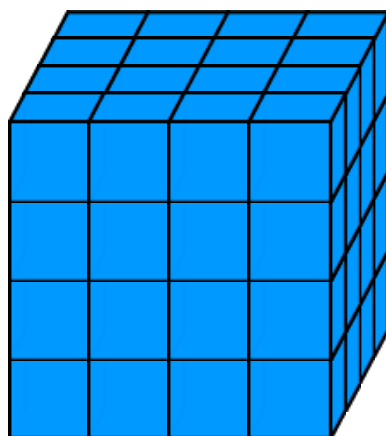
$$\begin{aligned} P &= S + S + S + S \\ &= 5.5\text{ cm} + 5\text{ cm} + 7\text{ cm} + 6\text{ cm} \\ &= \underbrace{5.5\text{ cm} + 5\text{ cm}}_{10.5\text{ cm}} + \underbrace{7\text{ cm} + 6\text{ cm}}_{13\text{ cm}} \\ &= 23.5\text{ cm} \end{aligned}$$

Find the area



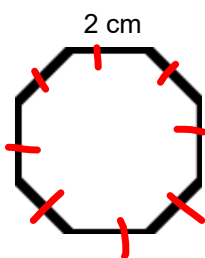
$$\begin{aligned} A &= L \times w \\ &= 4 \text{ cm} \times 3.2 \text{ cm} \\ &= 12.8 \text{ cm}^2 \end{aligned}$$

Find the Volume



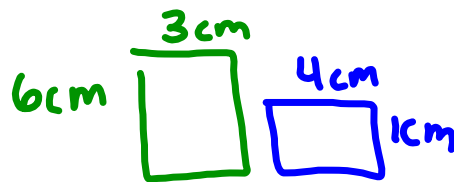
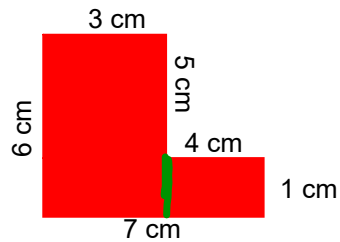
$$\begin{aligned} V &= L \times W \times H \\ &= 4 \times 4 \times 4 \\ 4 \times 4 \times 4 &= 64 \text{ unit}^3 \end{aligned}$$

Find the perimeter.



$$\begin{aligned} P &= 8 \times \text{side} \\ &= 8 \times 2 \text{ cm} \\ &= 16 \text{ cm} \end{aligned}$$

Find the area

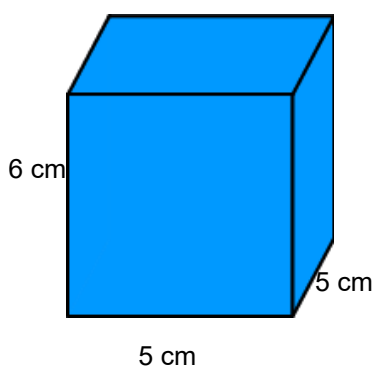


$$\begin{aligned} A &= L \times W \\ &= 3\text{ cm} \times 6\text{ cm} \\ &= 18\text{ cm}^2 \end{aligned}$$

$$\begin{aligned} A &= L \times W \\ &= 4\text{ cm} \times 1\text{ cm} \\ &= 4\text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Total Area} &= 18\text{ cm}^2 + 4\text{ cm}^2 \\ &= 22\text{ cm}^2 \end{aligned}$$

Find the Volume.



$$\begin{aligned} V &= L \times W \times H \\ &= 5\text{ cm} \times 5\text{ cm} \times 6\text{ cm} \\ &= 25\text{ cm}^2 \times 6\text{ cm} \\ &= 150\text{ cm}^3 \end{aligned}$$