

3. No. Dani has made a similar mistake to the one on the video. You are not allowed to have any overlapping lines when you split the shape into triangles.

It should be:



This is an octagon.

It has 8 sides.

There are 6 triangles.

$$6 \times 180^\circ = 1080^\circ$$

$$\begin{array}{r} 180 \\ \times \quad 6 \\ \hline 1080 \\ \hline \end{array}$$

The sum of the internal angles of a triangle is 180° .

There are some different ways you could draw the triangles on - just make sure they don't overlap.

5. a) Total interior angles of a hexagon = 720° .
One interior angle = $720^\circ \div 6 = 120^\circ$.

At the point, we have a right angle, the hexagon angle and y .

$$360^\circ = 90^\circ + 120^\circ + y. \quad y = 150^\circ.$$

b) Total interior angles of a pentagon = 540° .

One interior angle = $540^\circ \div 5 = 108^\circ$.

At the point, we have three of these pentagon angles and y .

$$360^\circ = 108^\circ + 108^\circ + 108^\circ + y$$

$$360^\circ = \underbrace{108^\circ + 108^\circ + 108^\circ}_{324^\circ} + y. \quad y = 36^\circ.$$

c) Total interior angles of an octagon = 1080° .

One interior angle = $1080^\circ \div 8 = 135^\circ$.

$$\begin{array}{r} 0135 \\ 8 \overline{) 11080} \end{array}$$

Total interior angles of a triangle = 180° .

One interior angle = $180^\circ \div 3 = 60^\circ$.

At the point, we have one octagon angle, one triangle angle, a right angle and y .

$$360^\circ = 135^\circ + 60^\circ + 90^\circ + y$$

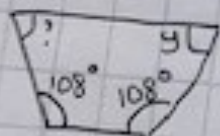
$$360^\circ = 285^\circ + y \quad y = 75^\circ$$

d) In b) we worked out that an interior angle of a pentagon was 108° .

In c) we worked out that an interior angle of a triangle was 60° .

$$108^\circ = 60^\circ + y \quad y = 48^\circ$$

e) We know that the interior angle of a pentagon is 108° .



Angles in a quadrilateral add to 360° .

$$360^\circ = 108^\circ + 108^\circ + ? + y \quad ? = 72^\circ \text{ and } y = 72^\circ$$

f) In c) we found out that the interior angle of an octagon was 135° .

We know the interior angle of a pentagon is 108° .

$$135^\circ - 108^\circ = y. \quad y = 27^\circ.$$