

Mathematics

# Angles in Polygons

## Downloadable Resource – Generalising and comparing generalisations

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# Try this

Using the diagrams, sort these statements into the Venn diagram:

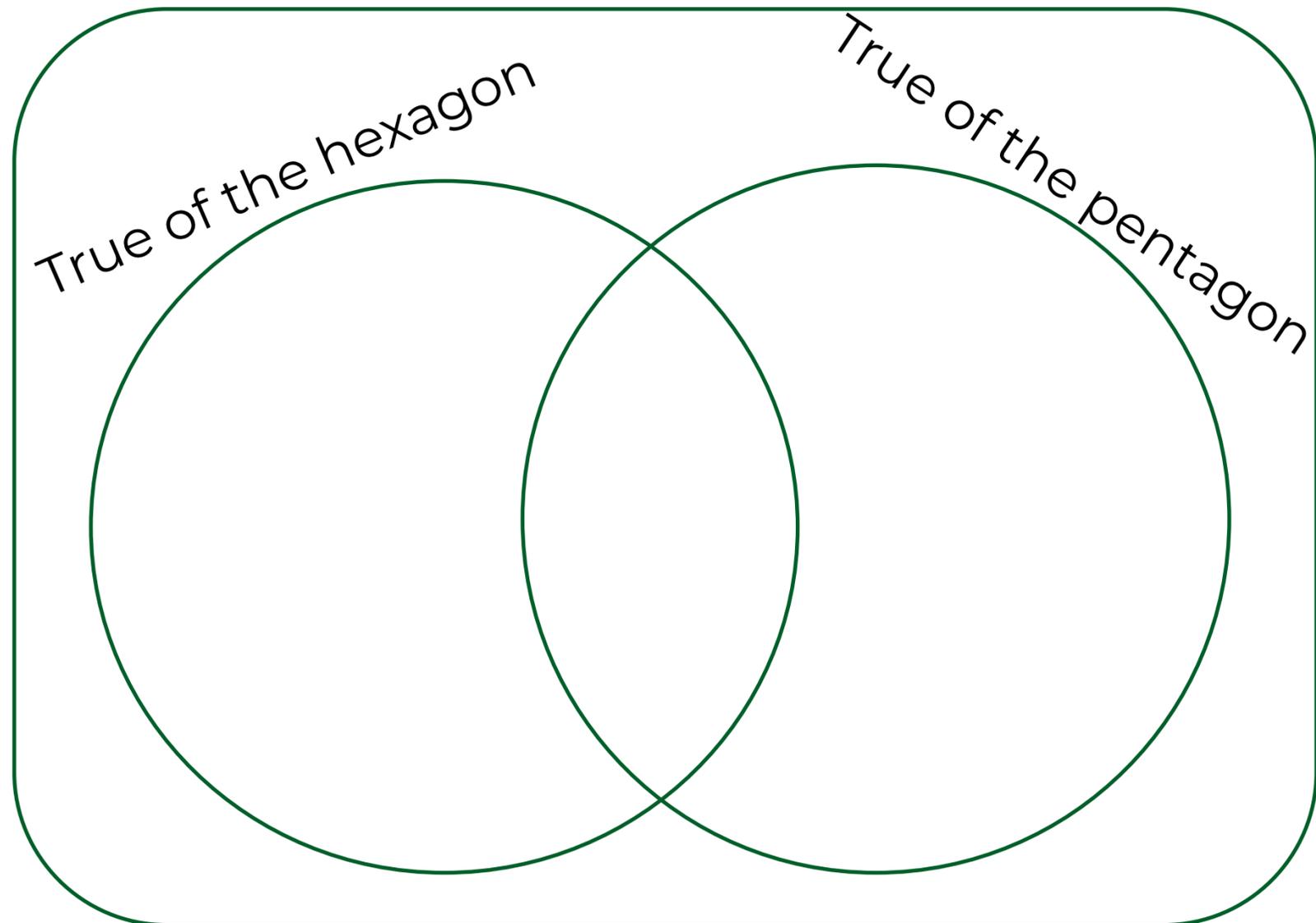
**A:** The sum of the purple angles is the same as the sum of the orange angles

**B:** The mean of the purple angles is  $60^\circ$

**C:** All of the marked angles have different sizes

**D:** The sum of the purple angles is  $540^\circ$

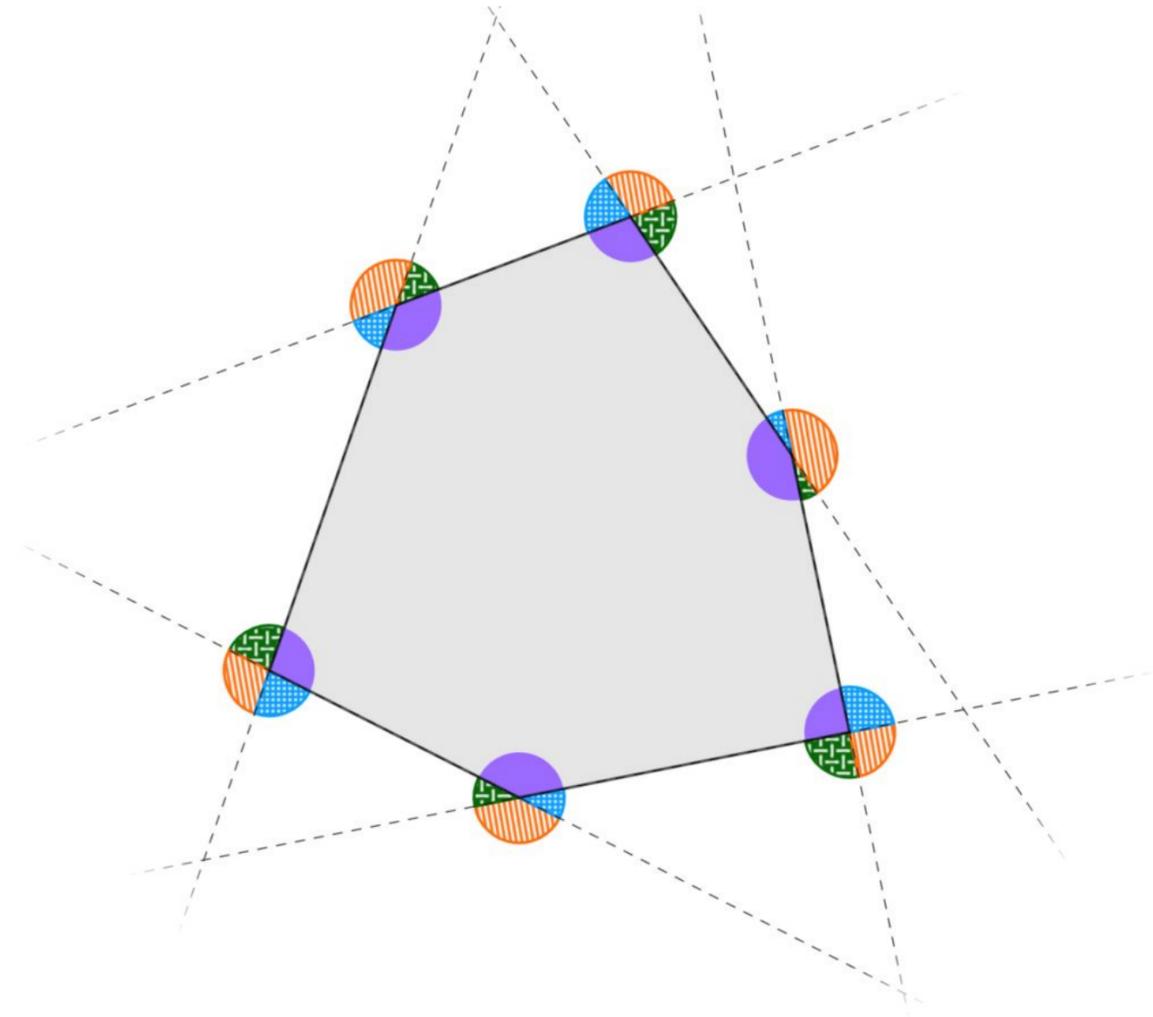
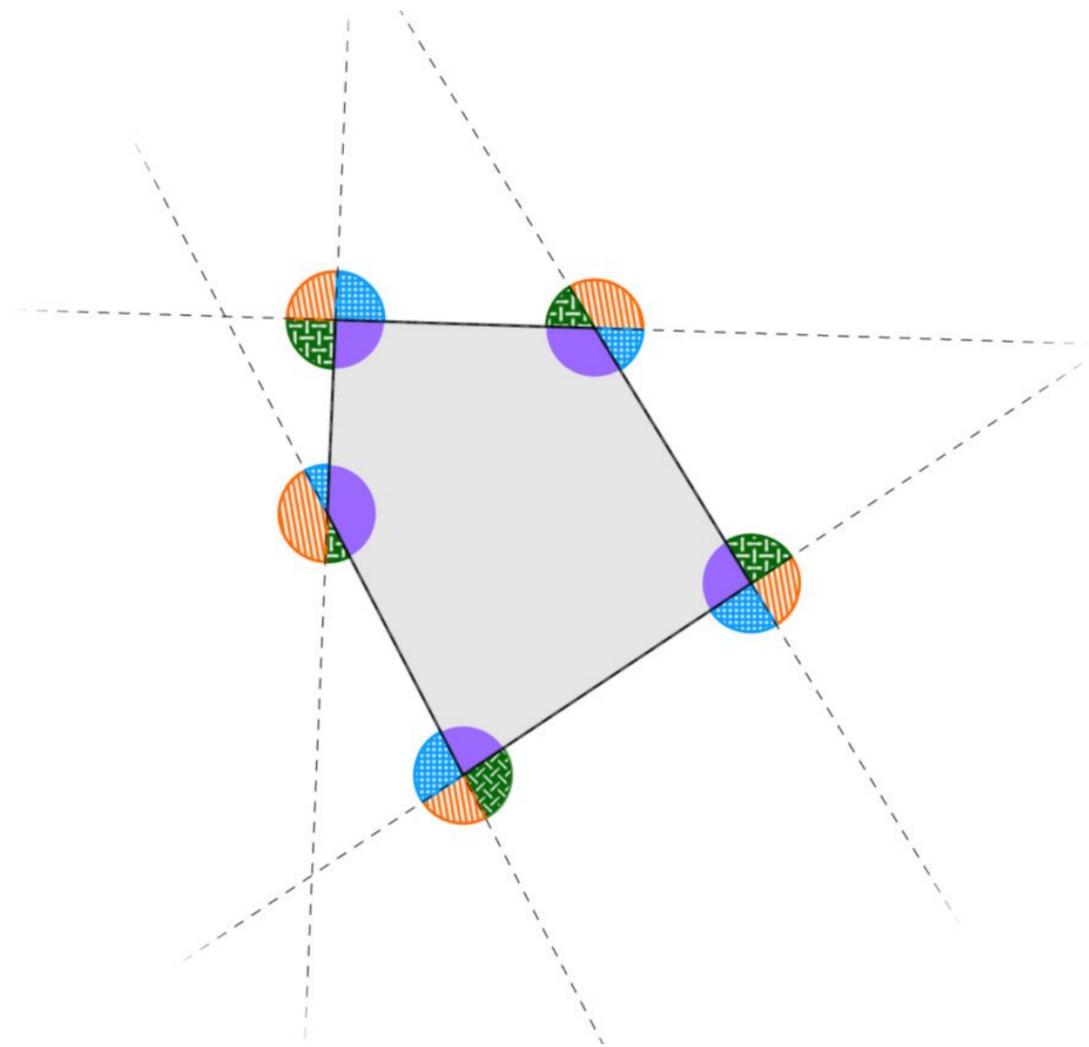
**E:** The sum of the blue angles is  $360^\circ$



What other statements could you add to the diagram?



# Try this



# Connect

Let's compare some of the generalisations we've seen so far...



# Independent Task

The sum of the interior angles of a regular hexagon is \_\_\_\_\_

Each interior angle of a regular hexagon is \_\_\_\_\_

The sum of the exterior angles of a regular hexagon is \_\_\_\_\_

Each exterior angle of a regular hexagon is \_\_\_\_\_

The sum of the interior angles of an  $n$ -sided polygon is \_\_\_\_\_

Each interior angle of an  $n$ -sided polygon is \_\_\_\_\_

The sum of the exterior angles of an  $n$ -sided polygon is \_\_\_\_\_

Each exterior angle of an  $n$ -sided polygon is \_\_\_\_\_



# Explore

The sum of the interior angles of a  is \_\_\_\_\_

Each interior angle of a regular  is \_\_\_\_\_

The sum of the exterior angles of a  is \_\_\_\_\_

Each exterior angle of a regular  is \_\_\_\_\_

1 How many different answers can you find by filling the boxes with these words?

decagon

octagon

nonagon

pentagon

2 Fill each box with this word:

polygon

