Interior and Exterior angles of regular polygons GREEN

1. Calculate the sum of all the interior angles in a polygon

with:

a. 10 sides b. 12 sides c. 13 sides

2. How many sides do these regular polygons have if their exterior angles are…?

a. 30° b. 18° c. 40°

3. What is each interior angle of a regular polygon with 14 sides?

4. Each interior angle of a regular polygon is 168°. How many sides does the polygon have?

5. Calculate the sum of the interior angles of a polygon with 22 sides.

6. Vinny says that he has drawn a regular polygon with interior

angles of 25°. James says that is not possible. Who is correct? You must give a reason for your answer.

7. I walk around the perimeter of a regular hexagonal ornamental pond. Through how many degrees do I turn at each corner? And altogether?

8. The diagram shows a regular hexagon. What are the sizes of angles $a$ and $b$?

Interior and Exterior angles of regular polygons AMBER

1. Calculate the sum of all the interior angles in a polygon

with:

a. 10 sides b. 12 sides c. 13 sides

 $(10-2)×180°$

 $=$

2. How many sides do these regular polygons have if their exterior angles are…?

a. 30° b. 18° c. 40°

 $360°÷30°$

 $=$

3. What is each interior angle of a regular polygon with 14 sides?

Either start by calculating the sum of interior angles OR the size of an exterior angle.

4. Each interior angle of a regular polygon is 168°. How many sides does the polygon have?

Start by calculating the size of an exterior angle.

5. Calculate the sum of the interior angles of a polygon with 22 sides.

Use $(n-2)×180$

6. Vinny says that he has drawn a regular polygon with interior

angles of 25°. James says that is not possible. Who is correct? You must give a reason for your answer.

Calculate the exterior angle and divide 360° by your answer.

7. I walk around the perimeter of a regular hexagonal ornamental pond. Through how many degrees do I turn at each corner? And altogether?

If it’s tricky, draw a piccy!

8. The diagram shows a regular hexagon. What are the sizes of angles $a$ and $b$?

$a$ is not an exterior angle…

Interior and Exterior angles of regular polygons RED

1. Calculate the sum of all the interior angles in a polygon

with:

a. 10 sides b. 12 sides c. 13 sides

 $(10-2)×180°$ $=(12-2)×180°$

 $=8×180°$ $=$

 $=1440°$

2. How many sides do these regular polygons have if their exterior angles are…?

a. 30° b. 18° c. 40°

 $360°÷30°$ $360°÷18°$

 $=12$ sides $=$

3. What is each interior angle of a regular polygon with 14 sides?

Either start by calculating the sum of interior angles OR the size of an exterior angle.

 Exterior angle $=360°÷14=$ \_\_\_\_

Interior angle $=180°-$ \_\_\_\_ $=$

4. Each interior angle of a regular polygon is 168°. How many sides does the polygon have?

Start by calculating the size of an exterior angle.

 Exterior angle $=180°-168°=$ \_\_\_\_

 Sides $=360°÷$ \_\_\_\_ $=$ \_\_\_\_

5. Calculate the sum of the interior angles of a polygon with 22 sides.

Use $(n-2)×180$

 $(22-2)×180°$

 $=$

6. Vinny says that he has drawn a regular polygon with interior

angles of 25°. James says that is not possible. Who is correct? You must give a reason for your answer.

Calculate the exterior angle and divide 360° by your answer.

Exterior angle $=180°-25°=$ \_\_\_\_

 Sides $=360°÷$ \_\_\_\_ $=$ \_\_\_\_

7. I walk around the perimeter of a regular hexagonal ornamental pond. Through how many degrees do I turn at each corner? And altogether?

If it’s tricky, draw a piccy!



8. The diagram shows a regular hexagon. What are the sizes of angles $a$ and $b$?

$a$ is not an exterior angle…