GREEN ANSWERS

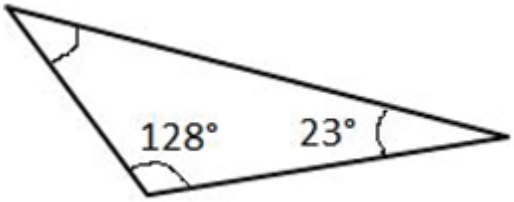
1. Daisy calculated that the acute angle was 34°.
   Is she correct?

Yes **No**

Explain your reasoning

No she isn't correct. The interior angles of a triangle add up to 180 degrees. We already have two angles. They are 66 + 90 which equals 156. Therefore the final angle must be 24 degrees to make 180.

2. Lucy calculated that the missing angle was 19°.



Is she correct?

Yes **No**

Explain your reasoning

No she isn't correct. The interior angles of a triangle add up to 180 degrees. We already have two angles. They are 128 + 23 which equals 151. Therefore the final angle must be 29 degrees to make 180.

Kirsty says,

When you double the size of an acute angle, you always get an obtuse angle.

Explain why Kirsty is **not** correct.

An explanation that includes a correct counter example, e.g.

- When you double 10° it is not obtuse
- $2 \times 27° = 54°$
- Double 45° is a right angle not obtuse

OR

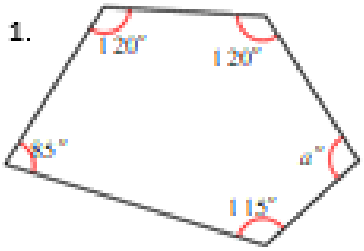
An explanation that demonstrates where the statement in the question is not correct, e.g.

- If the acute angle is less than 45° then doubling it will be less than 90°, so it won't be obtuse (more than 90°).

YELLOW ANSWERS

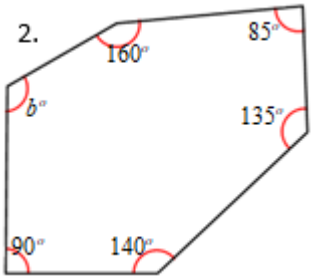
a = 100 degrees

1.



Explain how you know:
The interior angles of a pentagon add up to 540 degrees. Therefore 120 + 120 + 115 + 85 = 440 which leaves the last angle as 100 degrees.

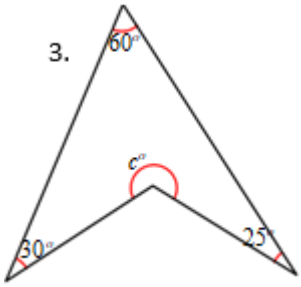
2.



Explain how you know:
The interior angles add up to 720 degrees. Therefore 160 + 85 + 135 + 140 + 90 = 610 which leaves the last angle as 110 degrees.

b = 110 degrees

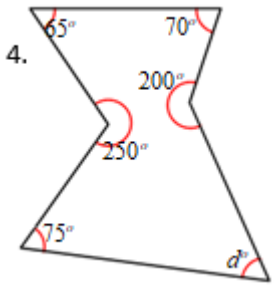
3.



Explain how you know:
The interior angles of a quadrilateral add up to 360 degrees. Therefore 60 + 30 + 25 = 115 which leaves the last angle as 245 degrees.

c = 245 degrees

4.

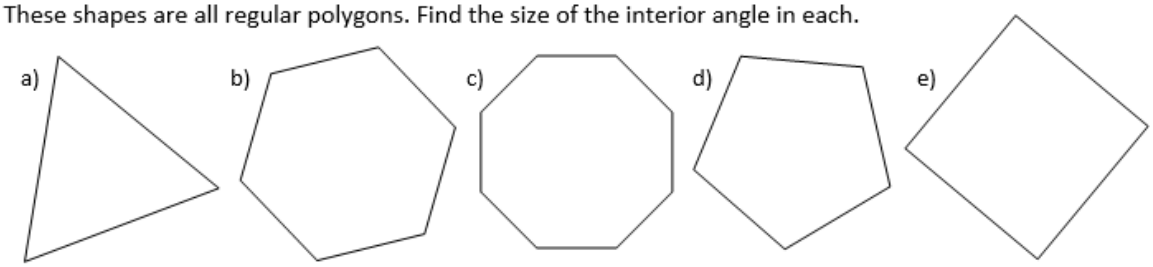


Explain how you know:
The interior angles add up to 720 degrees. Therefore 65 + 70 + 200 + 250 + 75 = 660 which leaves the last angle as 60 degrees.

d = 60 degrees

These shapes are all regular polygons. Find the size of the interior angle in each.

a) b) c) d) e)



a) All angles 60 degrees
b) All angles 120 degrees
c) All angles 135 degrees
d) All angles 108 degrees
e) All angles 90 degrees

RED ANSWERS

Q1.

90°	**45°**	**45°**
80°	**90°**	**10°**
70°	**70°**	**40°**
70°	**55°**	**55°**

Q2.

Joins dots to make a triangle that has only one side of 4 cm and only one angle of 45°.

Q3.

(a) 9

(b) 30

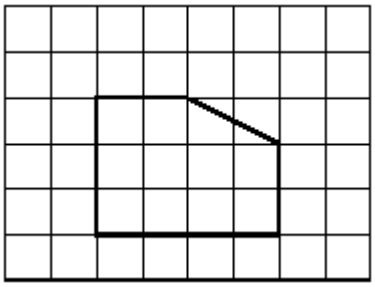
Q4.

x = 108°

y = 54°

Q5.

Any pentagon which has three right angles, eg



Q6.

108°

Appropriate explanation, eg:

- 180 – 72
- regular pentagon, angles are 108°
- isosceles triangles, 2 × 54