Sum of the angles of a triangle

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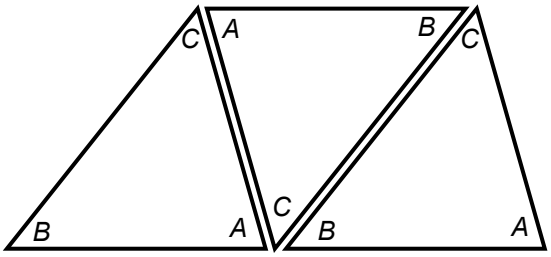
I expect you have already been told that the three angles in a triangle add up to 180^0.
Truly amazing and something you really have to know, so try to remember it now!

If you want to know why the angles of a triangle add up to 180^0 this simple diagram might help. Look at it carefully and see how the same triangle can be moved so that the 3 angles create a straight line (180^0).
Why not try it yourself by cutting out the same triangle three times. Remember to label the angles.



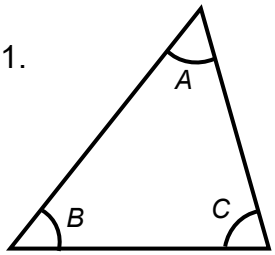
This means that you can work out the third angle of a triangle if you already know two of the angles.

e.g. angle A = 50^0 angle B = 60^0 what is angle C?

- add angle A and angle B: $50^0 + 60^0 = 110^0$
- subtract 110^0 from 180^0 $180^0 - 110^0 = 70^0$ angle C = 70^0

Work out the third angle in each of these triangles: (not drawn to scale so you cannot use a protractor to measure.)

1.



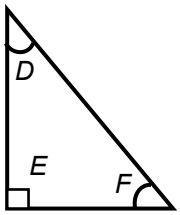
angle A = 52^0

angle B = 58^0

angle C = ……

Show your working out:

2.



angle D = 23^0

angle E = 90^0

angle F = ……

Show your working out:

3. A triangle has two equal angles of 40^0.

What is the third angle? ……

Show your working out:

Name:

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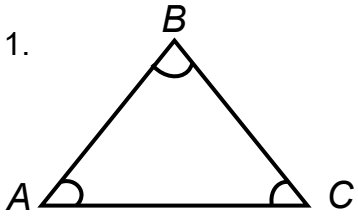
Calculate the size of the missing angle in each of these triangles.

(The triangles are not drawn to scale so you cannot use a protractor to measure.)

1.



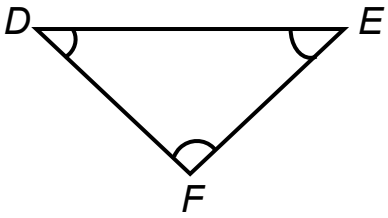
angle A = 58^0

angle B = 49^0

angle C = ……

Show your working out:

2.



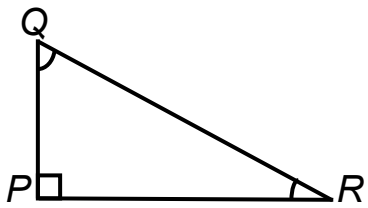
angle D = 44^0

angle E = 43^0

angle F = ……

Show your working out:

3.



angle P = 90^0

angle Q = ……

angle R = 38^0

Show your working out:

4. A triangle has two equal angles of 46^0.

What is the third angle? ……

Show your working out:

5. If two angles of a triangle are 39^0 and 124^0

What is the third angle? ……

Show your working out:

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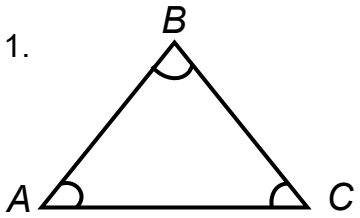
Calculate the size of the missing angle in each of these triangles.

(The triangles are not drawn to scale so you cannot use a protractor to measure.)

1.



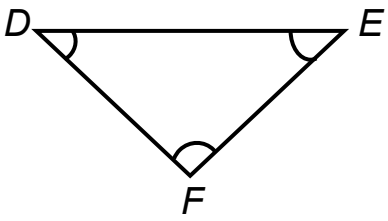
angle A = 47^0

angle B = 54^0

angle C = ……

Show your working out:

2.



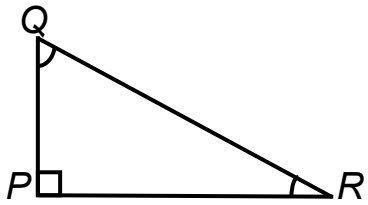
angle D = 38^0

angle E = 58^0

angle F = ……

Show your working out:

3.



angle P = 90^0

angle Q = ……

angle R = 17^0

Show your working out:

4. A triangle has two equal angles of 66^0.

What is the third angle? ……

Show your working out:

5. If two angles of a triangle are 69^0 and 108^0

What is the third angle? ……

Show your working out:

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Answers

Page 1

1. angle C = 70^0
2. angle F = 67^0
3. third angle = 100^0

Page 2

1. angle C = 73^0
2. angle F = 93^0
3. angle Q = 52^0
4. third angle = 88^0
5. third angle = 17^0

Page 3

1. angle C = 79^0
2. angle F = 84^0
3. angle Q = 73^0
4. third angle = 48^0
5. third angle = 3^0