



1) $a + b = 180^\circ$

True

If angle a was increased by 50° , then it would equal 40°

True

If angle a was decreased by 75° , then it would equal 10°

False. It would equal 15° .

If angle b was increased by 30° , then angle a would equal 50°

False. If b was increased by 30° , it would equal 120° .

This would mean angle a would equal 60° .

2) Angle $a = 154^\circ$

Angle $b = 44^\circ$

Angle $c = 150^\circ$

3) Answers will vary. Both angles should be acute angles. Angle b should be smaller than angle a . Both angles should sum together to make 90° , e.g. $a = 60^\circ$ and $b = 30^\circ$.

1) Could be angles a , b and c :

Set 4: all angles add to make 180°

Could not be angles a , b and c :

Set 1: angles add to make 183°

Set 2: angles add to make 180° , however, angle b and angle c can not both be 45° as angle b is larger than angle c .

Set 3: angles add to make 180° , however, angle a is given as 89° , which is not a right angle.

2) Nizar is correct. When all given angles are added together the sum is 292° .

$360^\circ - 292^\circ = 68^\circ$

3) False. Five 80° angles around a point can not sum to make 360° (five multiplied by 80° would equal 400°).

If there were 5 equal angles around a point they would need to each measure 72° .



1) Angle a :

All given angles add to 304° .

Angle a ($360^\circ - 304^\circ$) = 56°

Angle b :

$360^\circ \div 6 = 60^\circ$

Angle c :

$a + b = 116^\circ$

$180 - 116^\circ = 64^\circ$

Angle $c = 64^\circ$

2) When investigating angles around a point, the following whole-number equal angles can be formed:

2 equal angles: $360^\circ \div 2 = 180^\circ$

5 equal angles: $360^\circ \div 5 = 72^\circ$

9 equal angles: $360^\circ \div 9 = 40^\circ$

3 equal angles: $360^\circ \div 3 = 120^\circ$

6 equal angles: $360^\circ \div 6 = 60^\circ$

10 equal angles: $360^\circ \div 10 = 36^\circ$

4 equal angles: $360^\circ \div 4 = 90^\circ$

8 equal angles: $360^\circ \div 8 = 45^\circ$

3) Red: 120°

Green: 18°

Yellow: 60°

Blue: 162°

