

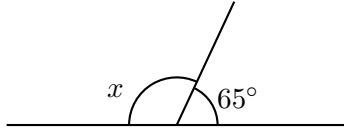
Foundation GCSE: Basic Angle Properties

Name: _____

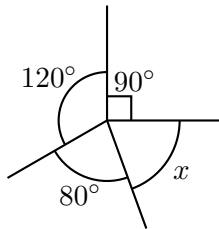
Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (10). Working out should be shown where appropriate.

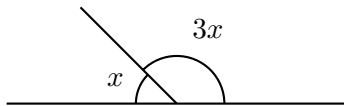
1. Calculate the missing angle on a straight line if one angle is 65° .



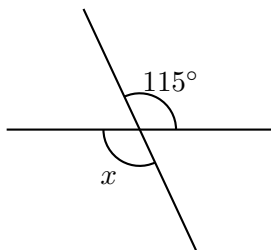
2. Find the missing angle around a point if the other three angles are 90° , 120° , and 80° .



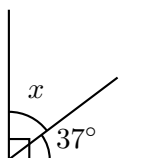
3. Two angles on a straight line are x and $3x$. Find the value of x .



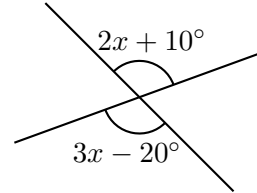
4. Find the vertically opposite angle to 115° .



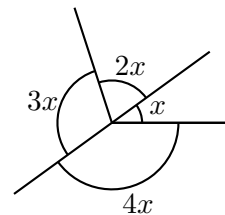
5. Calculate the size of an acute angle that is complementary to 37° .



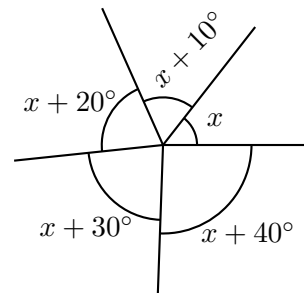
6. Two intersecting straight lines form angles $2x + 10^\circ$ and $3x - 20^\circ$ as vertically opposite angles. Find x .



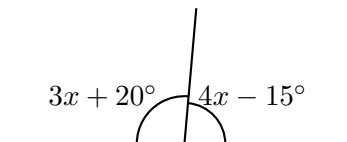
7. The angles around a point are in the ratio $1 : 2 : 3 : 4$. Find the largest angle.



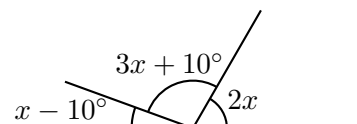
8. Five angles around a point are x , $x + 10^\circ$, $x + 20^\circ$, $x + 30^\circ$, and $x + 40^\circ$. Find x .



9. Two adjacent angles on a straight line are given as $4x - 15^\circ$ and $3x + 20^\circ$. Find the smaller angle.



10. Three angles form a straight line: $2x$, $3x + 10^\circ$, and $x - 10^\circ$. Find the value of the middle angle.



Answers & Worked Solutions

1. $115^\circ : 180^\circ - 65^\circ = 115^\circ$

2. $70^\circ : 360^\circ - (90^\circ + 120^\circ + 80^\circ) = 70^\circ$

3. $45^\circ : 4x = 180^\circ \implies x = 45^\circ$

4. $115^\circ : \text{Vertically opposite angles are equal.}$

5. $53^\circ : 90^\circ - 37^\circ = 53^\circ$

6. $30 : 2x + 10 = 3x - 20 \implies x = 30^\circ$

7. $144^\circ : \frac{4}{10} \times 360^\circ = 144^\circ$

8. $52 : 5x + 100^\circ = 360^\circ \implies 5x = 260^\circ \implies x = 52$

9. $85^\circ : 4x - 15 + 3x + 20 = 180 \implies 7x + 5 = 180 \implies 7x = 175 \implies x = 25$. Smaller angle $= 4(25) - 15 = 85^\circ$

10. $100^\circ : 6x = 180^\circ \implies x = 30^\circ$, middle angle $= 3(30^\circ) + 10^\circ = 100^\circ$