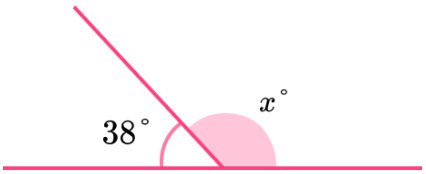
Angle Rules - Worksheet

Skill

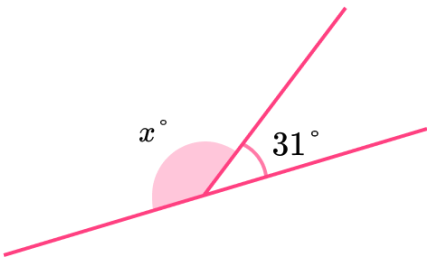
Group A - Angles on a straight line

Calculate the size of the angle labelled x (and y if required):

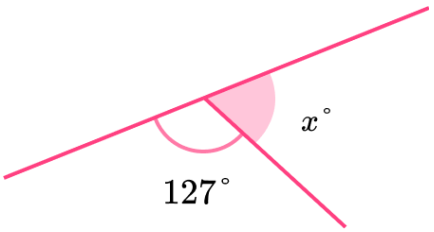
1)



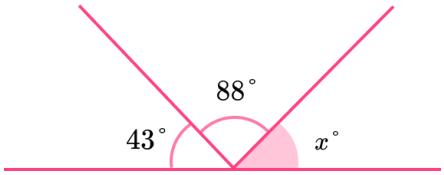
2)



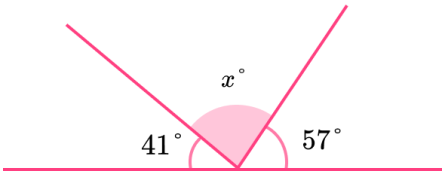
3)



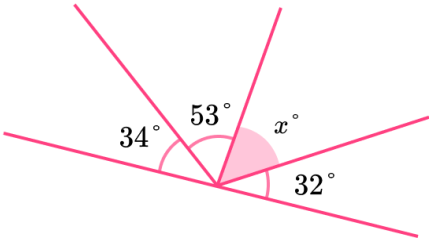
4)



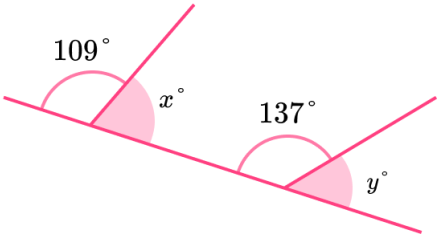
5)



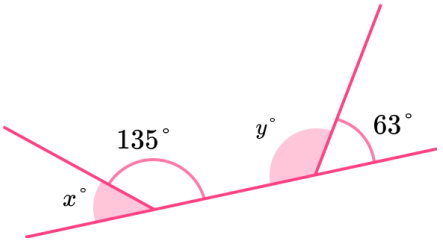
6)



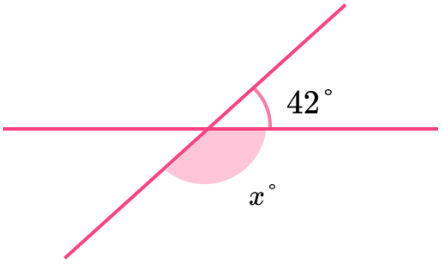
7)



8)



9)

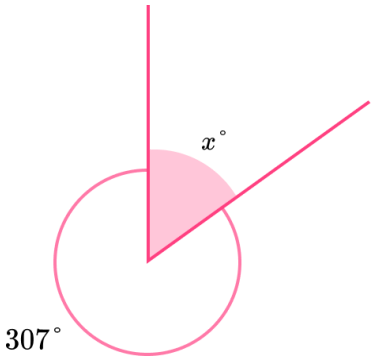


Angle Rules - Worksheet

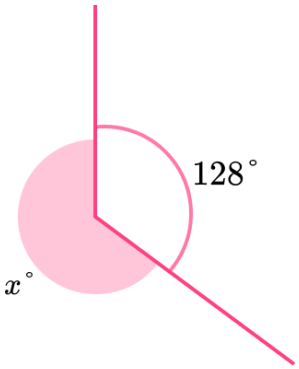
Group B - Angles at a point

Calculate the size of the angle labelled x (and y if required):

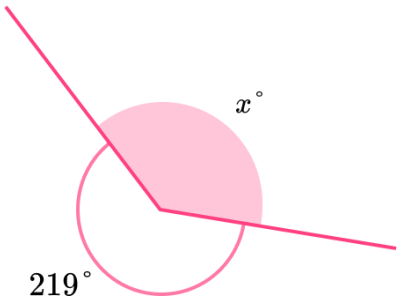
1)



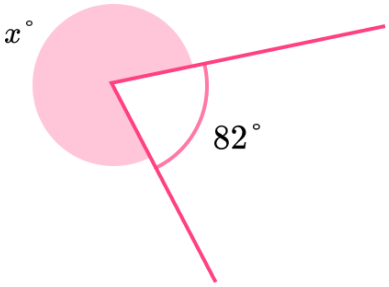
2)



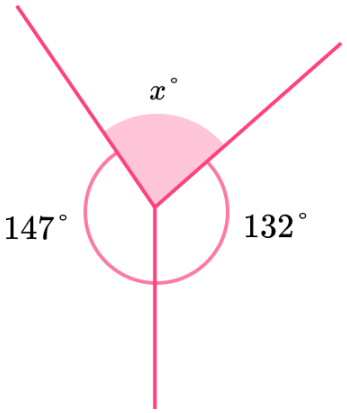
3)



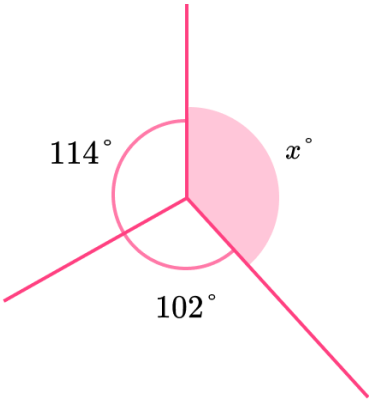
4)



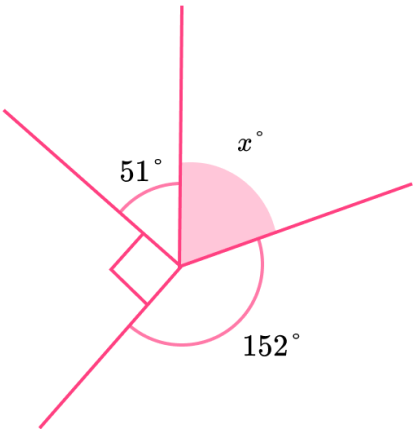
5)



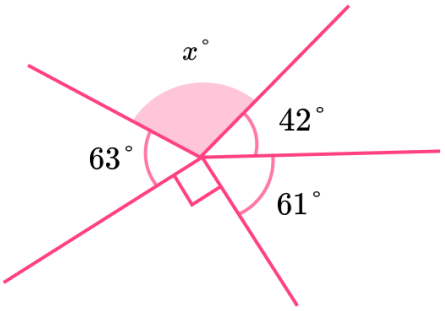
6)



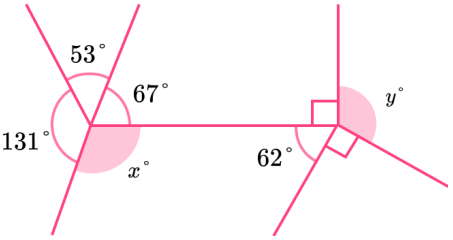
7)



8)



9)

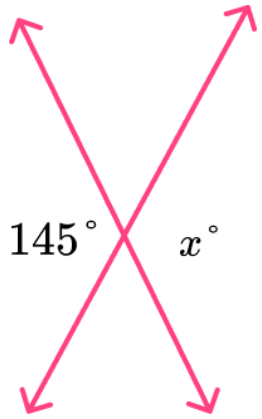


Angle Rules - Worksheet

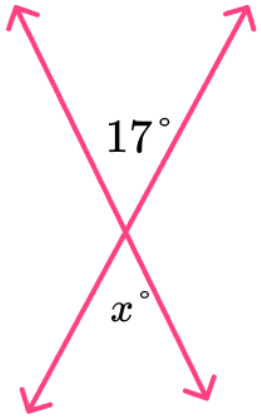
Group C - Solve the angle problem

Solve each angle problem:

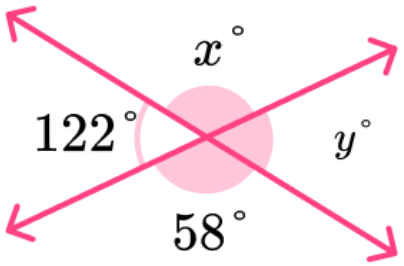
1) State the size of angle x.



2) State the size of angle x.



3) State the size of angles x and y:



4) Are the angles $100°$ and $80°$ supplementary angles?

5) Are the angles $40°$ and $50°$ supplementary angles?

6) Are the angles $110°$ and $70°$ complementary angles?

7) Are the angles $65°$ and $25°$ complementary angles?

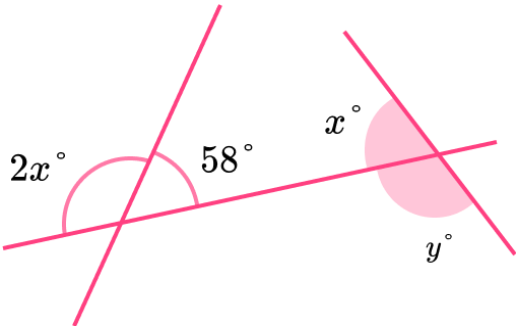
8) Can the angles $35°$, $100°$, $15°$, and $210°$ lie around a single point?

9) Angles x and $2x$ sit around a point. Calculate the value of x.

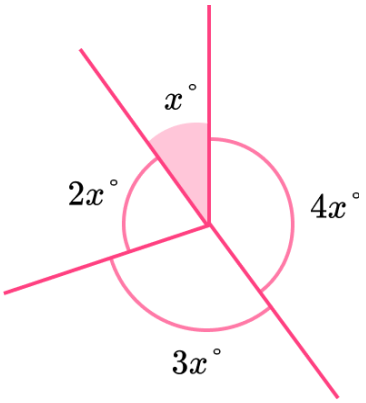
Angle Rules - Worksheet

Applied

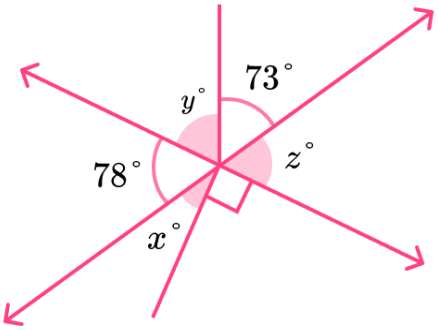
1) Determine the size of angles x and y:



2) Calculate the value of x.

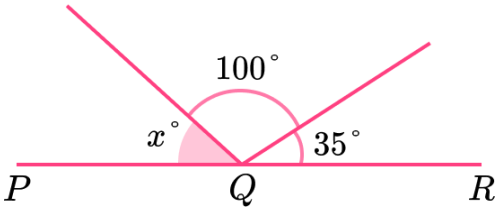


3) Calculate the value of angles x, y, and z.



Angle Rules - Exam Questions

1) PQR is a straight line. Find the value of x.



.....

(2 marks)

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2) Three angles fit exactly around a point. The second angle is 20 degrees more than the first angle. The third angle is twice the size of the second angle.

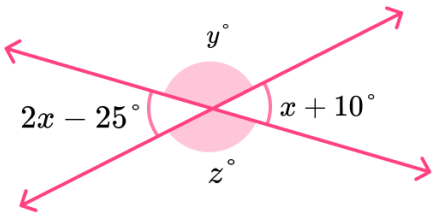
Find the size of each of the three angles.

.....

(4 marks)

---

3) Find the value of x, y and z.

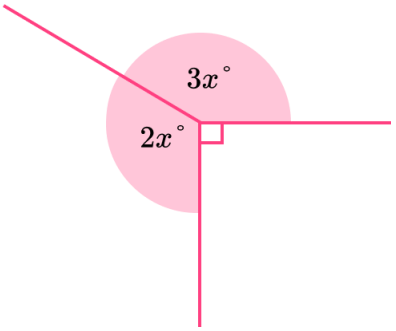


.....

(5 marks)

Angle Rules - Exam Questions

4) Find the value of x.



.....

(3 marks)

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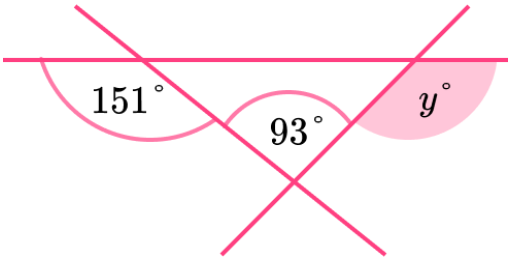
5) In the diagram below three straight lines are shown. Find the value of the angle labelled y.



.....

(3 marks)

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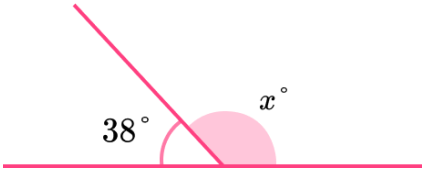
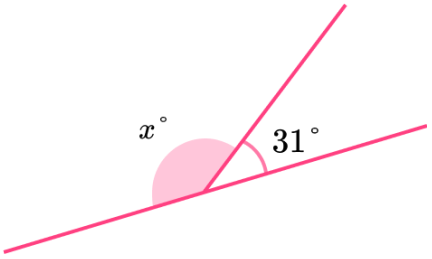
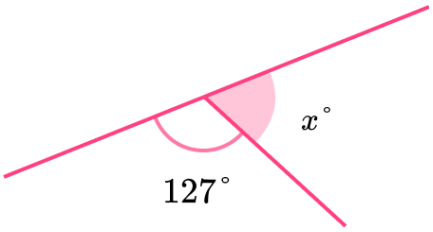
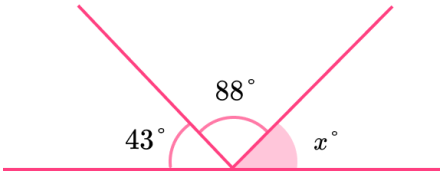
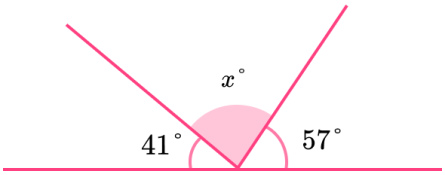
6) Two angles are supplementary and one of them is three times as big as the other. What is the size of the smaller of the two angles?

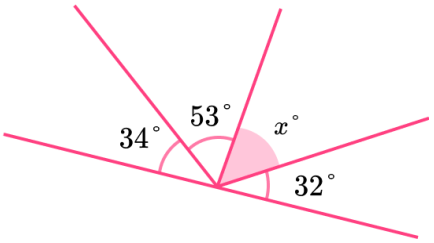
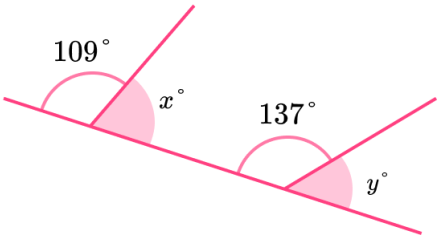
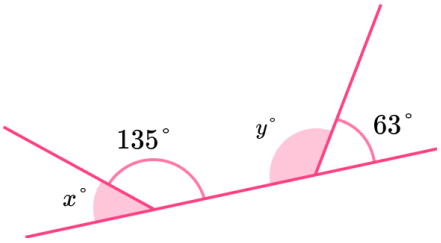
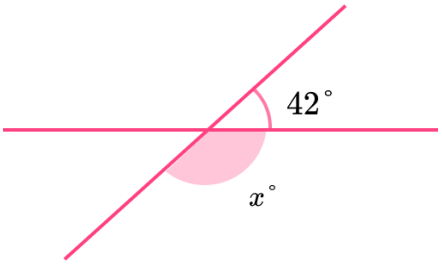
.....

(3 marks)

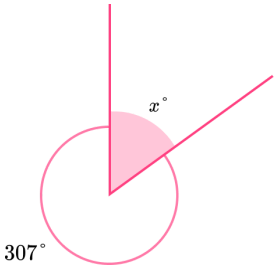
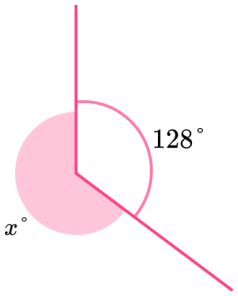
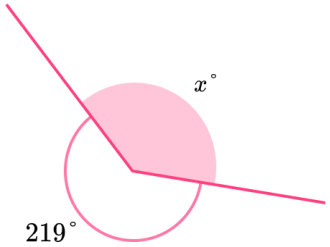
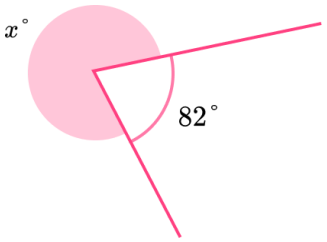
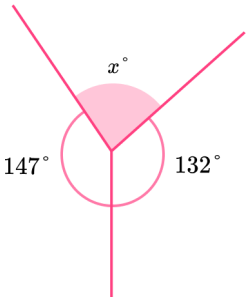
Angle Rules - Answers

	Question	Answer
	Skill Questions	
Group A	Calculate the size of the angle labelled x (and y if required): **1)**  **2)**  **3)**  **4)**  **5)** 	**1)** $x = 142^o$ **2)** $x = 149^o$ **3)** $x = 53^o$ **4)** $x = 49^o$ **5)** $x = 82^o$

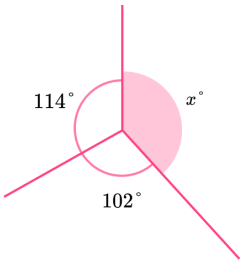
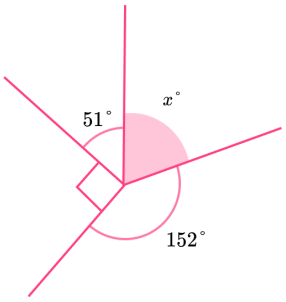
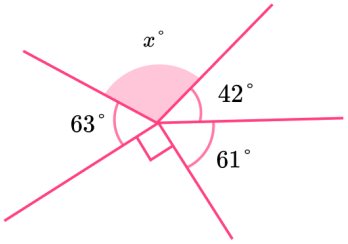
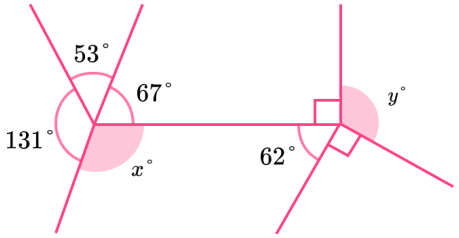
Angle Rules - Answers

Group A contd	**6)** 	**6)** $x = 61^o$
	7) 	**7)** $x = 71^o$, $y = 43^o$
	8) 	**8)** $x = 45^o$, $y = 117^o$
	9) 	**9)** $x = 138^o$

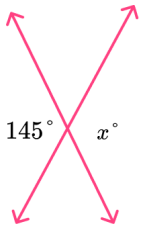
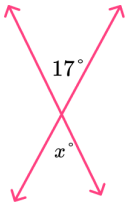
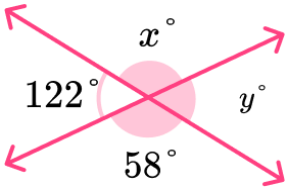
Angle Rules - Answers

Group B	Calculate the size of the angle labelled x (and y if required): **1)**  **2)**  **3)**  **4)**  **5)**  	**1)** $x = 53^o$ **2)** $x = 232^o$ **3)** $x = 141^o$ **4)** $x = 278^o$ **5)** $x = 81^o$

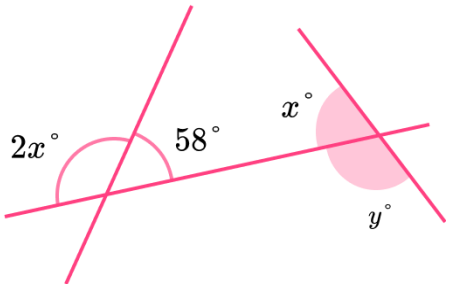
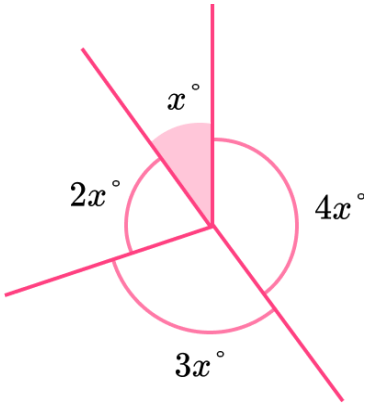
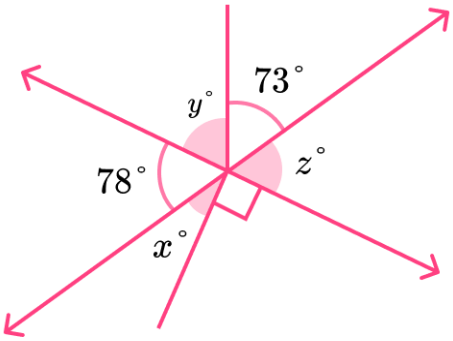
Angle Rules - Answers

Group B contd	**6)** 	**6)** $x = 144^o$
	7) 	**7)** $x = 67^o$
	8) 	**8)** $x = 104^o$
	9) 	**9)** $x = 109^o$, $y = 118^o$

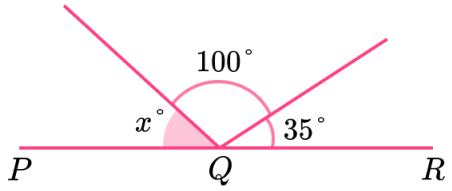
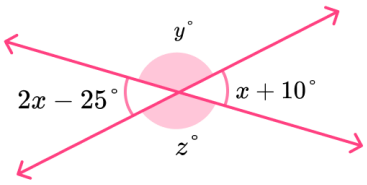
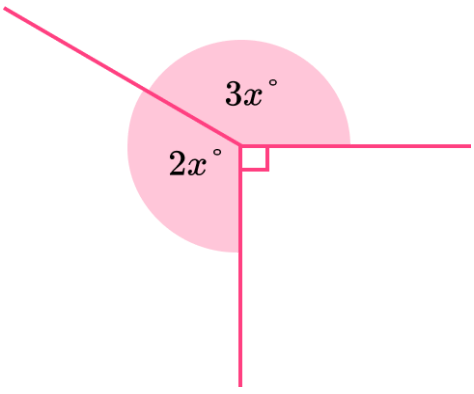
Angle Rules - Answers

Group C	Solve each angle problem:	
	1) State the size of angle x.  	**1)** $x = 145^o$
	2) State the size of angle x.  	**2)** $x = 17^o$
	3) State the size of angles x and y:  	**3)** $x = 58^o$, $y = 122^o$
	4) Are the angles 100° and 80° supplementary angles?	**4)** Yes, $100 + 80 = 180^o$
	5) Are the angles 40° and 50° supplementary angles?	**5)** No, $40 + 50 \neq 180^o$
	6) Are the angles 110° and 70° complementary angles?	**6)** No, $110 + 70 \neq 90^o$
	7) Are the angles 65° and 25° complementary angles?	**7)** Yes, $65 + 25 = 90^o$
	8) Can the angles 35°, 100°, 15°, and 210° lie around a single point?	**8)** Yes, $35 + 100 + 15 + 210 = 360^o$
	9) Angles x and $2x$ sit around a point. Calculate the value of x.	**9)** $x + 2x = 360$ and so $x = 120^o$

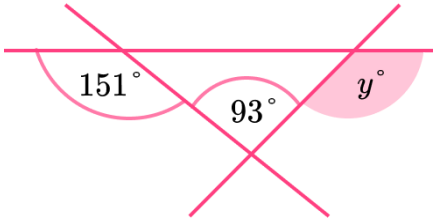
Angle Rules - Answers

	Question	Answer
	Applied Questions	
1)	Determine the size of angles x and y: 	$x = 61^o$ $y = 119^o$
2)	Calculate the value of x. 	$x = 36$
3)	Calculate the value of angles x, y, and z. 	$x = 12^o$ $y = 29^o$ $z = 78^o$

Angle Rules - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	PQR is a straight line. Find the value of x.  	$180° - (100° + 35°)$ 45^{o}	**(1)** **(1)**
2)	Three angles fit exactly around a point. The second angle is 20 degrees more than the first angle. The third angle is twice the size of the second angle. Find the size of each of the three angles.	2 of the following seen or implied 'x', '$x + 20$', '$2(x + 20)$' $4x + 60 = 360$ **oe** $x = 75$ Angles shown as 75^{o}, 95^{o}, and 190^{o}	**(1)** **(1)** **(1)** **(1)**
3)	Find the value of x, y and z.  	$2x - 25 = x + 10$ **oe** $x = 35$ One equation created for a straight line $= 180$ e.g. $x + 10 + y = 180$ $y = 135^{o}$ $z = 135^{o}$	**(1)** **(1)** **(1)** **(1)** **(1)**
4)	Find the value of x.  	Equation created where sum of angels = 360 e.g. $2x + 3x + 90 = 360$ **oe** Attempt to solve equation for x with at least one step carried out correctly for their equation $x = 54$	**(1)** **(1)** **(1)**

Angle Rules - Mark Scheme

5)	In the diagram below three straight lines are shown. Find the value of the angle labelled y.  	Allow any valid method of completion $180 - 151 = 29^o$ $180 - (93 + 29) = 58^o$ $180 - 58 = 122^o$	 **(1)** **(1)** **(1)**
6)	Two angles are supplementary and one of them is three times as big as the other. What is the size of the smaller of the two angles?	180 seen or implied at any point (could be in a diagram) $a + 3a = 180$ **oe** Smaller angle = 45°	**(1)** **(1)** **(1)**