

Surname	
Other Names	
Candidate's Signature	

## GCSE 9 - 1 Questions

### Solving Equations 1

**Calculator Not Allowed**

#### INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

**Total Marks :**

1) Solve

(a)  $\frac{p}{6} = 3$

Answer  $p =$  \_\_\_\_\_ [1]

(b)  $3t - 7 = 5$

Answer  $t =$  \_\_\_\_\_ [2]

2) Solve  $4x + 5 = 11$

Answer  $x =$  \_\_\_\_\_ [2]

3) Solve  $\frac{x}{5} = 4$

Answer  $x =$  \_\_\_\_\_ [1]

4) Solve

(i)

$$7x = 14$$

Answer  $x =$  \_\_\_\_\_ [1]

(ii)

$$12 - x = 9$$

Answer  $x =$  \_\_\_\_\_ [1]

5) Solve

$$\frac{21 - 2x}{3} = 5$$

Answer \_\_\_\_\_ [3]

6) Solve each of the following equations.

(a)  $8 + x = 21$

.....

..... [1]

(b)  $x - 3 = -7$

.....

..... [1]

(c)  $8x = 32$

.....

..... [1]

(d)  $2x - 5 = 9$

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.....

..... [2]

7) Solve the following equations.

(a)  $20x = 120$

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(b)  $40 - y = 25$

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- 8) (a) Draw lines to match each of the equations with its correct solution.  
The first one is done for you.

[4]

$x + 4 = 8$	$x = 12$
$\frac{x}{8} = 4$	$x = \frac{1}{2}$
$4x = 8$	$x = 4$
$x - 8 = 4$	$x = 16$
$8x = 4$	$x = 32$
	$x = \frac{1}{4}$
	$x = 8$
	$x = 2$

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- (b) Given that  $R = \frac{480}{2P+3Q}$ , find the value of  $R$  when  $P = 4$  and  $Q = 8$ .

[2]

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9) Pria was given 3 equations to solve.

$$a + 9 = 2$$

$$3b = 240$$

$$c - 5 = -1$$

Solve the 3 equations for Pria.

[3]

- $a + 9 = 2$

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- $3b = 240$

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- $c - 5 = -1$

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10) (a) Solve  $a + 6 = 19$ .

[1]

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(b) Solve  $6b = 42$ .

[1]

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11)

(a) Solve  $4x = 16$ . [1]

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(b) Solve  $\frac{y}{5} = 4$ . [1]

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(c) Solve  $5a - 8 = 17$ . [2]

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(d) Solve  $\frac{20}{b} = 5$ . [1]

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(e) The cost of a cup of tea is the same as the cost of a cup of coffee.  
Two cups of tea and three cups of coffee cost £8 in total.  
Find the cost of one cup of tea. [3]

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12)

(a) Fill in the missing values so that the solution to each of the following equations will be

$$x = 10$$

The first one has been done for you.

[4]

$$x \div \underline{2} = 5$$

$$x - \underline{\quad\quad\quad} = 9$$

$$x + \underline{\quad\quad\quad} = 16$$

$$\underline{\quad\quad\quad} + x = -2$$

$$4x = \underline{\quad\quad\quad}$$

(b) Write down an equation that gives the solution  $x = 3$ .

[1]

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(c) Write down an equation that gives the solution  $x = -10$ .

[1]

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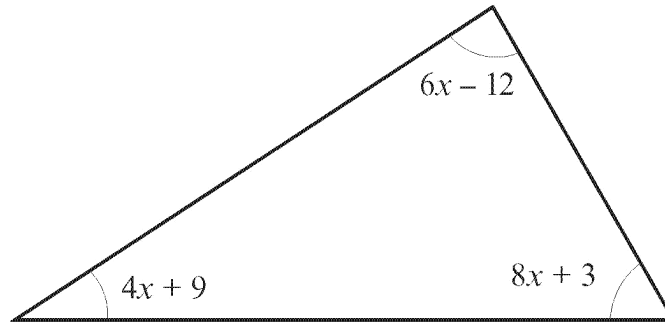
13)

All the angles in this triangle are measured in degrees.

Calculate the size of the **smallest** angle.

You must show clearly how you identify the smallest angle.

[5]



*Diagram not drawn to scale*

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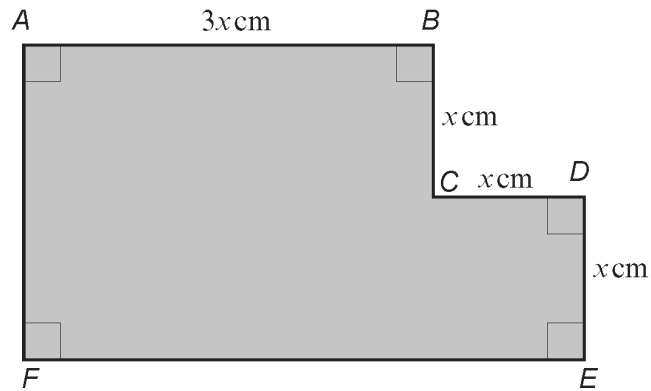
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Size of smallest angle = .....

14) The diagram shows a 6-sided shape.



*Diagram not drawn to scale*

(a) Write down the length of  $FE$  in terms of  $x$ . [1]

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(b) The perimeter of the 6-sided shape is 480 cm.  
Find the value of  $x$ . [2]

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15)

A teacher asks the pupils in her class to write an equation for the information given below.



I think of a number.  
When I subtract it from 11  
the answer is 7.5.

Jodie and David each write their equations below.

Jodie's equation	David's equation
$n - 11 = 7.5$	$11 - n = 7.5$

- (a) Whose equation is correct?  
Give a reason for your answer.

[1]

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- (b) Solve Jodie's and David's equations.

[2]

Jodie's equation	David's equation
$n - 11 = 7.5$	$11 - n = 7.5$
.....	.....
.....	.....

- (c) The teacher asks the pupils in the class to solve the equation  $3n = 6$ .  
Jodie writes her answer as  $n = 0.5$ .  
Jodie's teacher tells her that this is incorrect.

What error did Jodie make?  
Give the correct answer to the equation.

[2]

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