THIRD SPACE LEARNING

GCSE Exam Questions

Forming and Solving Equations | Algebra

GCSE Exam Questions: Forming and Solving Equations

1) Robert is x years old.

Sara is 3 years older.

Tam is twice as old as Robert.

The total of their ages is 59.

(a) Write an expression for Sara's age.

(1)

(b) Write an expression for Tam's age.

(1)

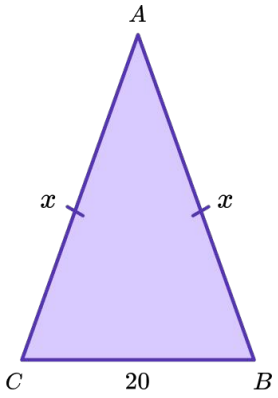
(c) Form an equation in x and use it to find Robert's age.

(3)

(5 marks)

GCSE Exam Questions: Forming and Solving Equations

2) ABC is an isosceles triangle where: AB = x cm, BC = 20 cm, and AC = x cm.



(a) Write a simplified expression, in terms of x, for the perimeter.

(2)

(b) The perimeter of the triangle is 90 cm. Find the value of x.

x = _____

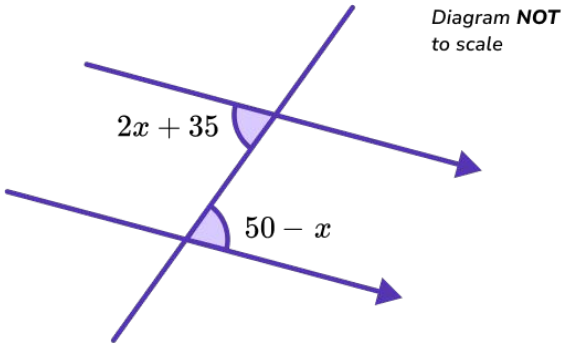
(2)

(4 marks)

GCSE Exam Questions: Forming and Solving Equations

3) **(a)** Use the diagram to form an equation in terms of x.

Give a reason for your equation.



(2)

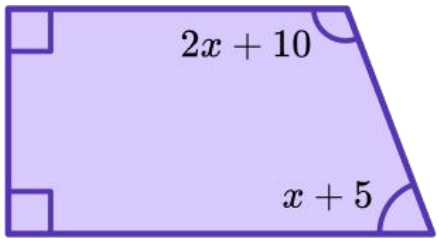
(b) Use your answer in part (a) to work out the value of x.

$x =$ _____

(2)

(4 marks)

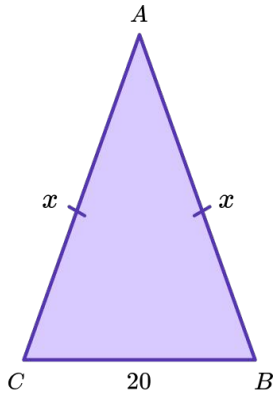
4) The diagram shows a trapezium.



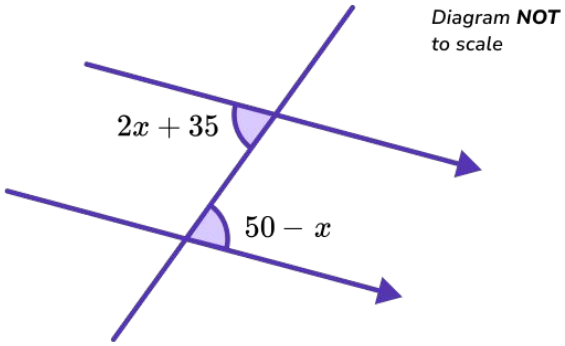
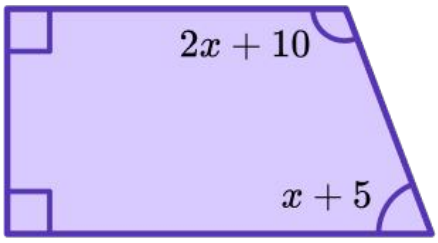
Calculate the size of the largest angle.

(4 marks)

GCSE Exam Questions: Forming and Solving Equations Answers

	Question	Answer	Marks
1) (a)	Robert is x years old. Sara is 3 years older. Tam is twice as old as Robert. The total of their ages is 59. Write an expression for Sara's age.	**(a)** $x + 3$	**(1)**
(b)	Write an expression for Tam's age.	**(b)** $2x$	**(1)**
(c)	Form an equation in x and use it to find Robert's age.	**(c)** $4x + 3 = 59$ $x = 14$ $2x = 28$ **or** Robert's age is 28 **oe**	**(1)** **(1)** **(1)**
2)	ABC is an isosceles triangle where $AB = x$, $BC = 20$, and $AC = x$.  		
(a)	Write a simplified expression, in terms of x, for the perimeter.	**(a)** $x + x + 20$ $2x + 20$	**(1)** **(1)**
(b)	The perimeter of the triangle is $90cm$. Find the value of x.	**(b)** $2x + 20 = 90$ $x = 35$	**(1)** **(1)**

GCSE Exam Questions: Forming and Solving Equations Answers

	Question	Answer	Marks
3) (a)	Use the diagram to form an equation in terms of x. Give a reason for your equation.  	**(a)** $2x + 35 = 50 - x$ Alternate angles are equal	**(1)** **(1)**
(b)	Use your answer in part (a) to work out the value of x.	**(b)** $3x = 15$ $x = 5$	**(1)** **(1)**
4)	The diagram shows a trapezium.  Calculate the size of the largest angle.	$90 + 90 + 2x + 10 + x + 5 = 360$ **or** $2x + 10 + x + 5 = 180$ **or** $3x + 15 = 180$ $3x = 165$ $x = 55$ $2x + 10 = 120$	 **(1)** **(1)** **(1)** **(1)**

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