THIRD SPACE LEARNING

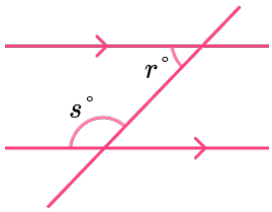
GCSE Exam Questions

Angles in Parallel Lines | Geometry & Measure

GCSE Exam Questions: Angles in Parallel Lines

1) **(a)** Below is a diagram showing two parallel lines intersected by a transversal.

Write an equation connecting r and s.



(1)

(b) Given that the angle r: s = 3: 5, circle another equation connecting r and s. Circle your answer.

$3r = 5s$ $5r = 3s$ $8r = s$ $s = 8r$ $rs = 15$

(1)

(2 marks)

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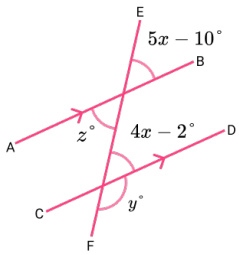
2) Lines AB and CD are parallel.



(a) By finding the value of x, calculate the exact value of $z°$.

(3)

(b) Calculate the value of $y°$.

(1)

(4 marks)

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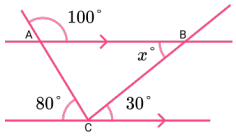
3) Look at the diagram below.



(a) Tick the box next to the correct statement:

- ☐ x is vertically opposite 30°.
- ☐ x is alternate to 30°.
- ☐ x is corresponding to 80°.
- ☐ x is co-interior with 30°.

(1)

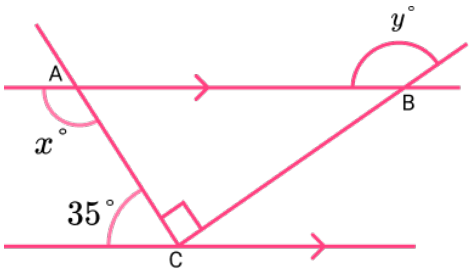
(b) Show that triangle ABC is scalene.

(4)

(5 marks)

GCSE Exam Questions: Angles in Parallel Lines

4) Look at the diagram below.



(a) Calculate the value of $x°$. Show your working (this can be on the diagram).

You must state any angle facts used

(2)

(b) Show that $y = 125°$. Explain your answer.

(3)

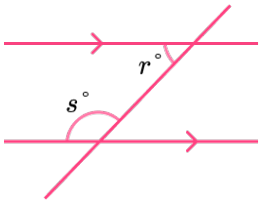
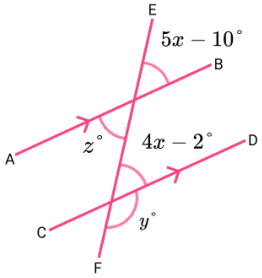
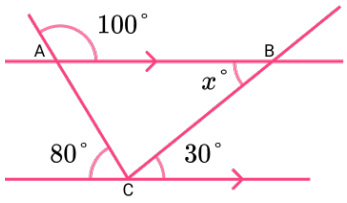
(c) A similar right angle triangle has double the side lengths of the triangle ABC.

How does this affect the angles inside the enlarged triangle?

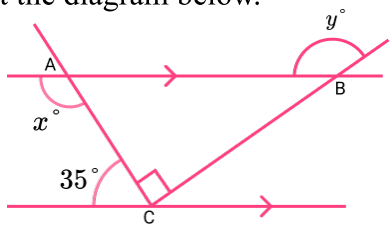
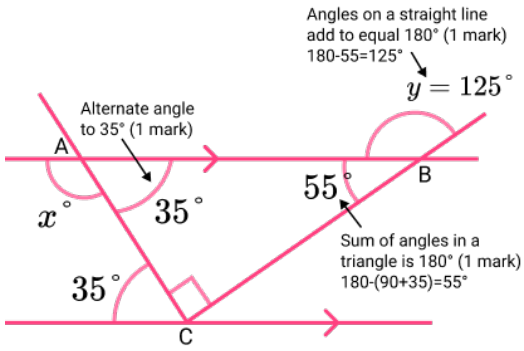
(1)

(6 marks)

GCSE Exam Questions: Angles in Parallel Lines Answers

	Question	Answer	Marks
1) (a)	Below is a diagram showing two parallel lines intersected by a transversal. Write an equation connecting r and s.  	**(a)** $r + s = 180$	**(1)**
(b)	Given that the angle r: s = 3: 5, circle another equation connecting r and s. $3r = 5s$ $5r = 3s$ $8r = s$ $s = 8r$ $rs = 15$	**(a)** $5r = 3s$	**(1)**
2) **(a)**	Lines AB and CD are parallel.  By finding the value of x, calculate the exact value of $z°$.	**(a)** $5x - 10 = 4x - 2$ $x = 8°$ $4 \times 8 - 2 = z = 30°$	**(1)** **(1)** **(1)**
(b)	Calculate the value of $y°$.	**(a)** $y = 180 - 30 = 150°$	**(1)**
3) **(a)**	Look at the diagram below.  Tick the box next to the correct statement. ☐ x is vertically opposite 30°. ☐ x is alternate to 30°. ☐ x is corresponding to 80°. ☐ x is co-interior with 30°.	**(a)** ☑ x is alternate to 30°.	**(1)**

GCSE Exam Questions: Angles in Parallel Lines Answers

	Question	Answer	Marks
(b)	Show that triangle ABC is scalene.	**(b)** $ABC = 30°$ $BAC = 80°$ $ACB = 70°$ All angles are different and so the triangle is scalene.	**(1)** **(1)** **(1)** **(1)**
4)	Look at the diagram below. 		
(a)	Calculate the value of x°. Show your working (this can be on the diagram). You must state any angle facts used.	**(a)** $x = 180 - 35 = 145°$ x is co-interior to 35°	**(1)** **(1)**
(b)	Show that $y = 125°$. Explain your answer.	**(a)**  0 marks for calculating angles without any reasoning e.g. 180 - 55 = 125° only	**(3)**
(c)	A similar right angle triangle has double the side lengths of the triangle ABC. How does this affect the angles inside the enlarged triangle?	**(a)** They stay the same (no change).	**(1)**