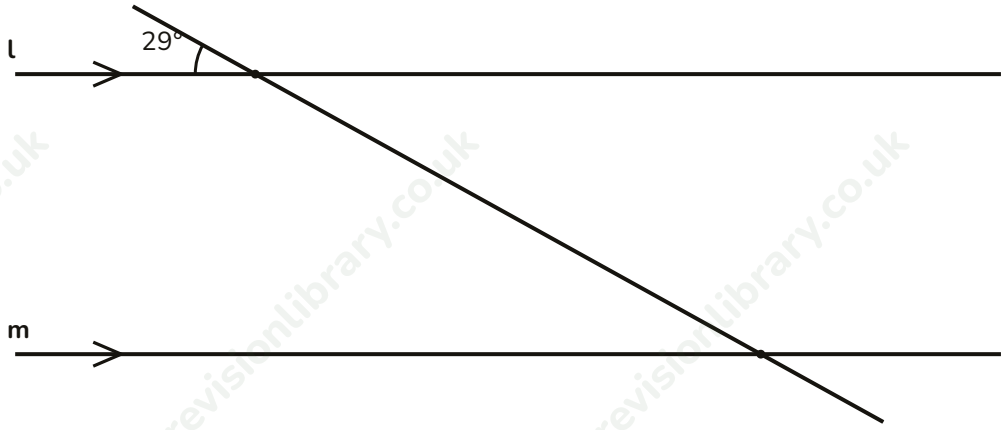
4.9 Angles in Parallel Lines: 30-minute Pack

Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

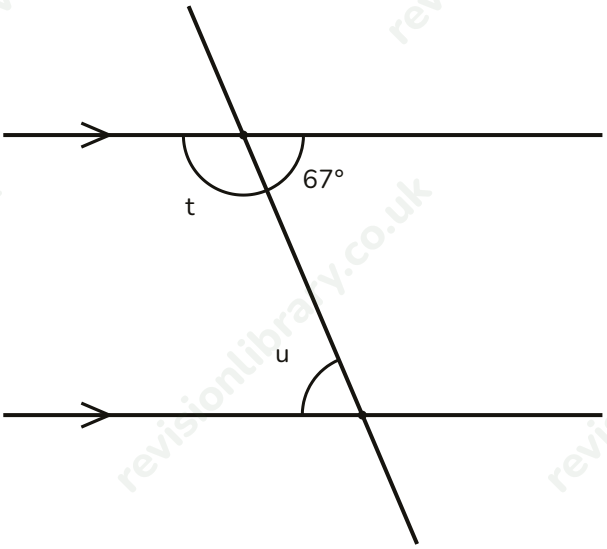
1 Lines l and m are parallel. A transversal cuts them and creates an angle of 29 degrees inside at the top left of the first intersection. Find the angle vertically opposite to the corresponding angle at the second intersection that matches the 29 degree angle. Explain your steps.



(3)

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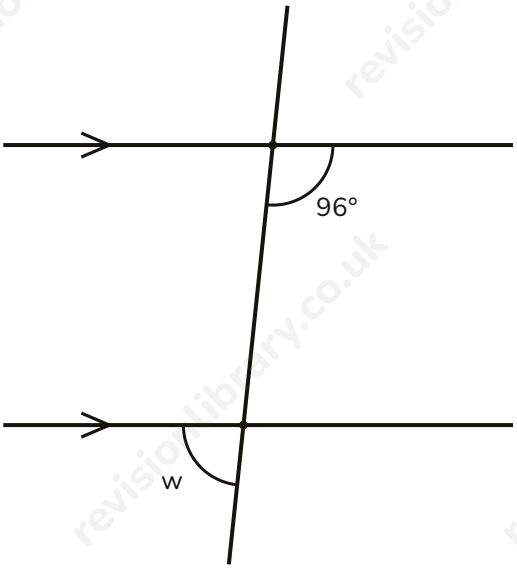
2 A transversal meets two parallel lines. At the first intersection two adjacent angles are 67 degrees and t degrees. On the same side of the transversal at the second intersection the interior angle is u degrees and is co-interior with t. Find t and u.



(2)

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3 A transversal intersects two parallel lines. At one intersection an angle is 96 degrees. At the other intersection, the angle adjacent to the corresponding angle is w. Find w.



(2)

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4 Two straight lines cross. Two opposite angles are $2y°$ and $(y + 7)°$. Work out the value of y and the size of each of these angles.

(3)

---

5 Angles on a straight line meet at a point. One angle is 54°. Work out the other angle.

(2)

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6 Two parallel lines are crossed by a straight line. A pair of alternate angles are $(2x + 20)°$ and $(x + 38)°$.
Work out the value of x and the size of each angle.

(4)

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7 Two straight lines cross. One of the angles formed is 47°. Write down the size of the angle opposite it and give a reason.

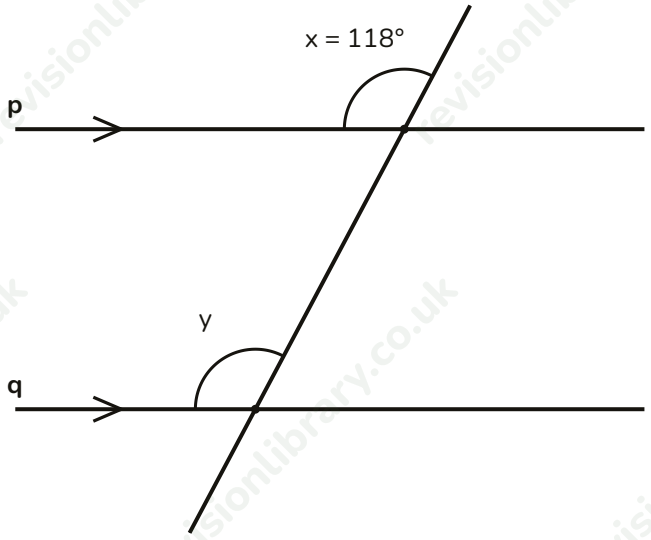
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(2)

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8 Lines p and q are parallel. A transversal meets them. Angle x and angle y are corresponding angles. If x = 118 degrees, find y.



(2)

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9 State the name of the angle relationship: two angles are on the same side of the transversal inside the parallel lines and add to 180 degrees.

(1)

---

10 A transversal cuts two parallel lines. At one intersection, an angle next to the transversal is 3x degrees. The co-interior angle at the other intersection is (x + 60) degrees. Find x.

(3)

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Mark scheme · 4.9 Angles in Parallel Lines: 30-minute Pack

Question 1

identify corresponding angle at second intersection equals 29	M1
identify vertical opposite to that corresponding angle equals same value	M1
final statement: the vertically opposite angle = 29 degrees with short explanation cao	A1

Answer: **29 degrees**

Question 2

use that adjacent angles on a line add to 180 to find t	M1
t = 113 degrees and u = 67 degrees with brief reason cao	A1

Answer: **t = 113 degrees, u = 67 degrees**

Question 3

recognise adjacent angles are supplementary	M1
w = 84 degrees cao	A1

Answer: **84 degrees**

Question 4

2y = y + 7	M1
y = 7	A1
each angle is 14°	A1

Answer: **y = 7, angles are 14°**

Question 5

180 - 54	M1
126° cao	A1

Answer: **126°**

Question 6

2x + 20 = x + 38	M1
x = 18	A1
substitutes x = 18	M1
56° cao	A1

Answer: **x = 18, each angle is 56°**

Question 7

47°	B1
vertically opposite angles are equal	B1

Answer: **47° (vertically opposite angles are equal)**

Question 8

use of corresponding angles equality or statement	M1
y = 118 degrees cao	A1

Answer: **118 degrees**

Question 9

co-interior angles or interior supplementary angles, oe	B1

Answer: **Co-interior angles**

Question 10

uses co-interior angles sum to 180: 3x + (x+60) = 180	M1
simplifies to 4x + 60 = 180	M1
x = 30 cao	A1

Answer: **30**

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