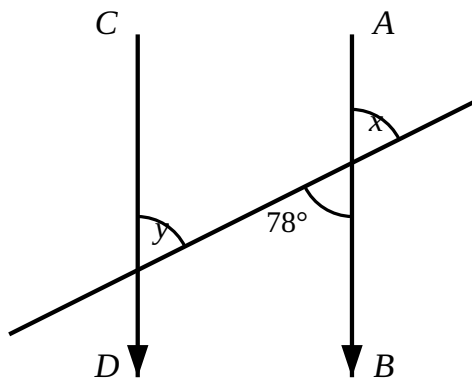


ANGLES IN PARALLEL LINES**Best Guess Mastery Worksheet (Target Grade 4/5)****I Do**

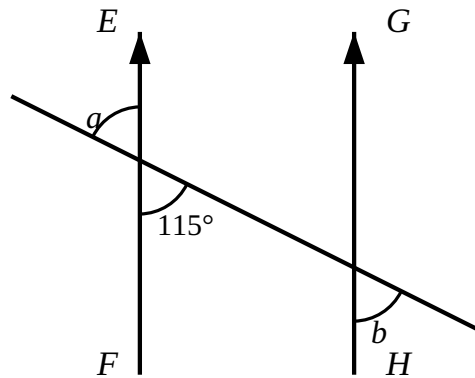
AB and CD are parallel lines.



- (a) Write down the size of angle x giving a reason for your answer.
- (b) Write down the size of angle y giving a reason for your answer.

We Do

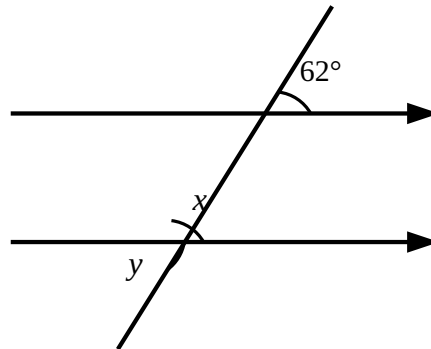
EF and GH are parallel lines.



(a) Write down the size of angle a giving a reason for your answer.

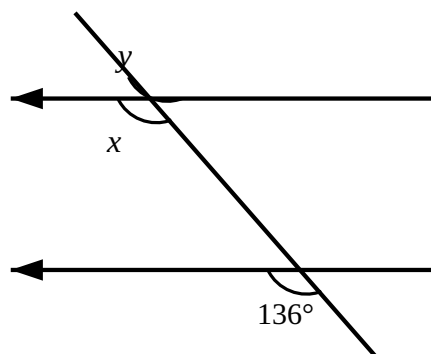
(b) Write down the size of angle b giving a reason for your answer.

ANGLES IN PARALLEL LINES**Best Guess Mastery Worksheet (Target Grade 4/5)****You Do 1**



- (a) Work out the size of angle x giving a reason.
- (b) Work out the size of angle y giving a reason.

You Do 2



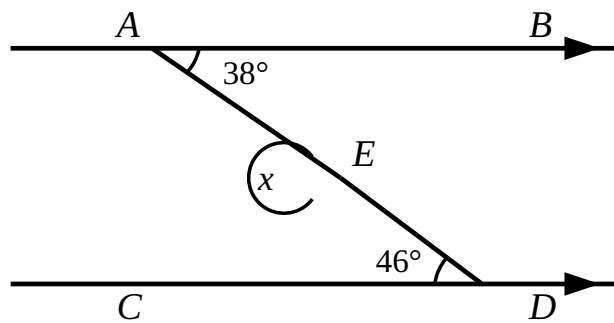
- (a) Work out the size of angle x giving a reason.
- (b) Work out the size of angle y giving a reason.

ANGLES IN PARALLEL LINES**Best Guess Mastery Worksheet (Target Grade 4/5)****Challenge 1**

Lines AB and CD are parallel. E is a point between them.

Angle $BAE = 38^\circ$ and angle $DCE = 46^\circ$.

Work out the size of the reflex angle AEC (marked x).

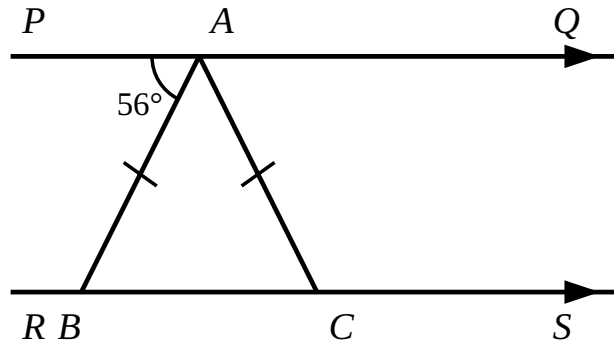


Challenge 2

Lines PQ and RS are parallel. Triangle ABC is drawn such that A is on PQ , and B and C are on RS .

$AB = AC$. The angle PAB is 56° .

Work out the size of angle BAC .

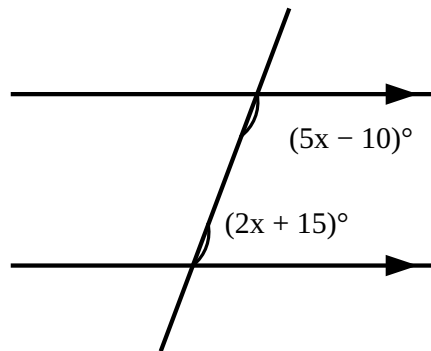


ANGLES IN PARALLEL LINES**Best Guess Mastery Worksheet (Target Grade 4/5)****Challenge 3**

A transversal intersects two parallel lines.

Two co-interior angles are given by the expressions $(5x - 10)^\circ$ and $(2x + 15)^\circ$.

Work out the value of x and use it to find the exact size of the obtuse angle.



Answers & Worked Solutions

I Do:

(a) $x = 78^\circ$. Reason: Vertically opposite angles are equal.

(b) $y = 78^\circ$. Reason: Alternate interior angles are equal.

We Do:

(a) $a = 115^\circ$. Reason: Vertically opposite angles are equal.

(b) $b = 115^\circ$. Reason: Corresponding angles are equal.

You Do 1:

(a) $x = 62^\circ$. Reason: Corresponding angles are equal (or alternate interior).

(b) $y = 180^\circ - 62^\circ = 118^\circ$. Reason: Angles on a straight line add up to 180° .

You Do 2:

(a) $x = 180^\circ - 136^\circ = 44^\circ$. Reason: Co-interior (allied) angles add up to 180° .

(b) $y = 44^\circ$. Reason: Vertically opposite angles are equal.

Challenge 1:

Draw a parallel line passing through E.

Top part of angle E = 38° (Alternate interior to BAE).

Bottom part of angle E = 46° (Alternate interior to DCE).

Interior angle AEC = $38^\circ + 46^\circ = 84^\circ$.

Reflex angle $x = 360^\circ - 84^\circ = 276^\circ$

Challenge 2:

Angle ABC = 56° (Alternate interior angle to PAB).

Since triangle ABC is isosceles ($AB = AC$), base angle ACB = angle ABC = 56° .

Angle BAC = $180^\circ - (56^\circ + 56^\circ) = 180^\circ - 112^\circ = 68^\circ$

Challenge 3:

Co-interior angles sum to 180° .

$$5x - 10 + 2x + 15 = 180$$

$$7x + 5 = 180$$

$$7x = 175 \rightarrow x = 25$$

Angles are: $5(25) - 10 = 115^\circ$ and $2(25) + 15 = 65^\circ$.

Exact size of the obtuse angle = 115°