Name & Surname: _____ Class: _____ Date: _____

POINTS IN FOUR QUADRANTS

Plot, name, and measure with coordinates



About 45 minutes Level ★★★☆☆

TASK A /6

Box the command word, underline the topic, then use the plan to plot and explain.

1. Box the command word **2. Underline** the topic **3. Count** the marks: how many points? **4. Plan**, then write

Plot points A(-3, 4), B(2, 4), and C(2, -2). Join them in order. Explain how you know the distance from A to B is 5 units and the distance from B to C is 6 units, using absolute value. (6)

Command word	Topic	Points I need
.....	.....	.....

Plot A, B, C across then up or down and name quadrants → Show A to B shares y = 4 so |2 - (-3)| = 5 → Show B to C shares x = 2 so |4 - (-2)| = 6 → Link horizontal and vertical sides to the shape

My answer

.....

.....

.....

.....

.....

.....

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PLOT AND COMPARE

Practice naming quadrants and finding horizontal and vertical distances.

KEY WORDS

origin: the starting point (0, 0)

quadrant: one of the four sections of the plane

y-axis: the vertical number line

ordered pair: two numbers (x, y) giving a location

x-axis: the horizontal number line

absolute value: distance from zero, never negative

TASK B

/12

Work out quadrants and distances without a calculator.

WARM UP

1. Write the **quadrant** for the point (-4, 5).

   Answer: _____

2. Write the **quadrant** for the point (3, -6).

   Answer: _____

3. Write the **quadrant** for the point (-2, -3).

   Answer: _____

4. Write the **quadrant** for the point (5, 1).

   Answer: _____

PRACTISE

5. Points A(-2, 3) and B(-2, -4) share the same **x-coordinate**. Find the distance AB.

   Answer: _____

6. Points C(4, 2) and D(-5, 2) share the same **y-coordinate**. Find the distance CD.

   Answer: _____

7. Points E(-6, -1) and F(2, -1) share the same **y-coordinate**. Find the distance EF.

   Answer: _____

8. Explain how you **know** (-3, 2) and (3, 2) are not the same point.

   Answer: _____

PROBLEM SOLVING

9. A game token moves from (-5, 1) to (4, 1) along a **horizontal** line. How far did it move?

   Answer: _____

10. A worker goes from (-2, -8) to (-2, 6) on the same **vertical** line. Find the distance.

    Answer: _____

11. Points G(-4, -5) and H(-4, 3) mark a garden edge on a **vertical** line. Find the distance GH.

    Answer: _____

12. Explain how you **know** the distance between (-1, 4) and (-1, -4) is 8 units.

    Answer: _____

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SPOT THE SLIP

Find the wrong step in each solution and write the correct answer.

TASK C

/6

Find the wrong step and fix it using absolute value.



Student A

Find the distance between (-3, 5) and (4, 5).

1. Same y = 5, so distance = |x2 - x1|
2. |4 - (-3)| = |4 - 3| = |1| = 1
3. So the answer is 1 unit

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student B

Plot (-4, -2) and name its quadrant.

1. x = -4 so move 4 left from the origin
2. y = -2 so move 2 up
3. So the point is in Quadrant II

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student C

Plot (2, -5) and (-5, 2). Are they the same point?

1. Both points use 2 and 5 with one negative
2. So order does not matter
3. So the answer is yes, same point

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____

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DISTANCES IN CONTEXT

Solve real-world and shape problems by sharing x or sharing y.

TASK D

/12

Solve map and shape problems with coordinates.

WARM UP

1 Work out |-7| as a **distance** from zero.

Answer: _____

2 Work out |4 - (-9)| as a **distance**.

Answer: _____

3 Work out |-3 - 5| as a **distance**.

Answer: _____

4 Points (6, -2) and (6, 3) share x = 6. Work out |3 - (-2)| as a **distance**.

Answer: _____

PRACTISE

5 Rectangle corners are A(-3, 2), B(1, 2), C(1, -4). Find the missing **corner** D to make sides horizontal and vertical.

Answer: _____

6 Find the side **length** AB for A(-3, 2) and B(1, 2).

Answer: _____

7 Find the side **length** BC for B(1, 2) and C(1, -4).

Answer: _____

8 Explain how you **know** D must be (-3, -4).

Answer: _____

PROBLEM SOLVING

9 A drone flies straight down from (-4, 5) to (-4, -6). How many **units** did it fly?

Answer: _____

10 A shelf at (-6, -3) and checkout at (5, -3) share the same y. A shopper walks straight between them. How far in **units**?

Answer: _____

11 A fence runs P(-7, 4) to Q(3, 4), then Q(3, 4) to R(3, -5). Find the total **length** from P to Q to R.

Answer: _____

12 A student says the distance between (-2, 1) and (4, 3) is |4 - (-2)| = 6 because you can use **absolute value** anytime. Explain how you know this is wrong.

Answer: _____

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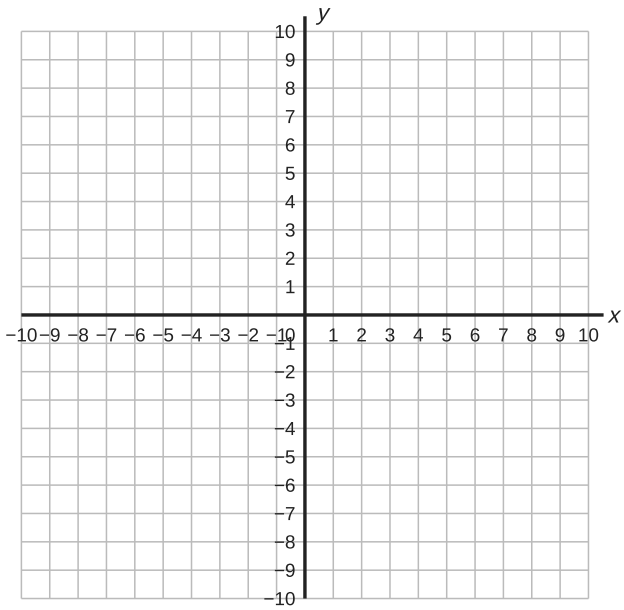
MAKE THE RECTANGLE

Plot points in four quadrants and test ideas about coordinates.

TASK E

/5

Plot the four points, join them in order, then name the shape.



A (−5, 4)

B (3, 4)

C (3, −3)

D (−5, −3)

Join the points in order to make a shape. What shape have you made?

Shape: _____

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POINTS IN FOUR QUADRANTS

TASK F

/4

Decide if each statement is always, sometimes, or never true. Give an example to convince me.

Statement	Always	Sometimes	Never
A point with a negative **x-coordinate** is in Quadrant II.			
Convince me: _____			
(a, b) and (b, a) name the same **point**.			
Convince me: _____			
The distance between points with the same **x-coordinate** equals |y2 - y1|.			
Convince me: _____			
A point with x = 0 is in a **quadrant**.			
Convince me: _____			

HOW DID I DO?

Circle a face for each line.

I can plot points in all four quadrants.

I can name the quadrant from coordinate signs.

I can use absolute value to find distances when points share x or y.

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Answer sheet: Points in Four Quadrants

Task A

Command word: Explain

Topic: distances with absolute value in four quadrants

Points: Plot A, B, C across then up or down and name quadrants; Show A to B shares y = 4 so |2 - (-3)| = 5; Show B to C shares x = 2 so |4 - (-2)| = 6; Link horizontal and vertical sides to the shape

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Task B

1. Quadrant II
2. Quadrant IV
3. Quadrant III
4. Quadrant I
5. 7 units
6. 9 units
7. 8 units
8. The x-coordinates have opposite signs, so one point is left of the y-axis and one is right.
9. 9 units
10. 14 units
11. 8 units
12. They share x = -1, so distance = |4 - (-4)| = 8 units.

Task C

1. Step 2 is wrong: They changed - (-3) to - 3. Subtracting a negative adds, so |4 - (-3)| = |7| = 7. Correct answer: 7 units
2. Step 2 is wrong: A negative y means move down, not up. Moving 4 left and 2 down lands in Quadrant III. Correct answer: Quadrant III
3. Step 2 is wrong: Order matters. The first number is across and the second is up or down, so (2, -5) is in Quadrant IV and (-5, 2) is in Quadrant II. Correct answer: No, different points

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Task D

1. 7
2. 13
3. 8
4. 5
5. (-3, -4)
6. 4 units
7. 6 units
8. D must line up with C across y = -4 and with A down x = -3 to make right angles.
9. 11 units
10. 11 units
11. 19 units
12. They share neither x nor y, so the points are not lined up horizontally or vertically and one absolute difference does not work.

Task E

A (−5, 4), B (3, 4), C (3, −3), D (−5, −3). The shape is a rectangle.

Task F

1. Sometimes (Sometimes true: (-4, 5) is in Quadrant II, but (-4, -5) is in Quadrant III.)
2. Sometimes (Sometimes true: (2, 2) and (2, 2) match, but (2, 3) is Quadrant I and (3, 2) is a different point.)
3. Always (Always true: for (-2, 3) and (-2, -4), |3 - (-4)| = 7 units, which matches the vertical distance.)
4. Never (Never true: (0, 4) is on the y-axis, and points on an axis are in no quadrant.)

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