Understanding the Coordinate Plane

Understanding the Coordinate Plane: Find, Fix, and Work Backward

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

In (x, y), the first coordinate tells how far right to go and the second how far up. Start at the origin $(0, 0)$. On the horizontal x-axis, $y = 0$; on the vertical y-axis, $x = 0$.

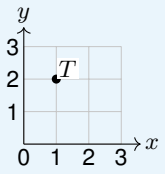
Worked example

A button T is 1 unit right and 2 units up from the origin. Give its ordered pair.

1. The move 1 right gives $x = 1$.

2. The move 2 up gives $y = 2$, so write $(1, 2)$ in that order.

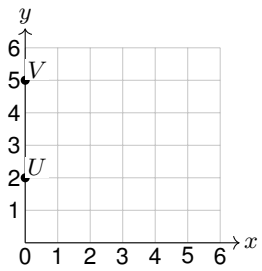
Answer: $T(1, 2)$.



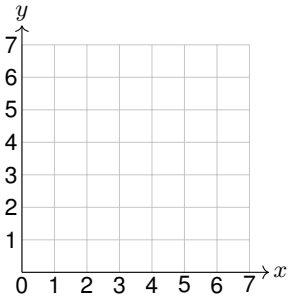
Practice Problems

Show your thinking.

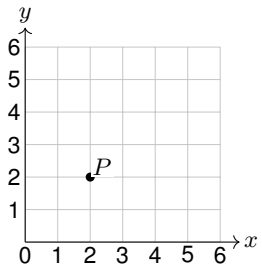
1. Kai labels the marked points $(2, 0)$ and $(5, 0)$. Explain his mistake and give the correct coordinates for U and V.



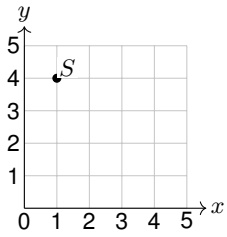
2. Find all points on the axes whose coordinates add to 6. Label the point on the x-axis A and the one on the y-axis B. Plot both.



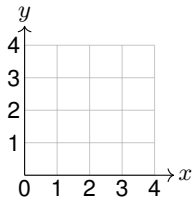
3. From $P(2, 2)$, a marker moves straight up 3 units to Q. Ana adds 3 to the first coordinate. Plot Q correctly and explain the error.



4. The grid shows S. Place N on the same row, 3 units farther from the y-axis than S. Give and plot N.



5. A classmate wants two different points, each on both axes. Is that possible? Plot every point that lies on both axes.



6. Sort $(2, 3)$, $(0, 4)$, $(5, 0)$, and $(3, 2)$ into points strictly inside the first quadrant and points on the axes.

Answer Key

1. $U(0, 2)$ and $V(0, 5)$.
2. $A(6, 0)$ and $B(0, 6)$.
3. $Q(2, 5)$. Moving up changes only the second coordinate.
4. $N(4, 4)$.
5. No. Only $O(0, 0)$ lies on both.
6. Inside: $(2, 3), (3, 2)$. On axes: $(0, 4), (5, 0)$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

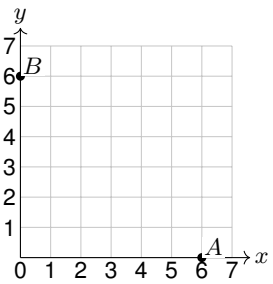
1. Both points sit on the vertical axis, so their first coordinates are 0.

2. U is 2 units up and V is 5 units up. Kai put the heights in the first positions.

Problem 2

1. On the x-axis the height is 0, so $x + 0 = 6$ gives $A(6, 0)$.

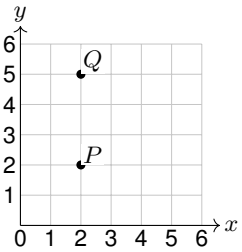
2. On the y-axis the horizontal coordinate is 0, so $0 + y = 6$ gives $B(0, 6)$. Each axis yields only one point.



Problem 3

1. A straight up move stays in column $x = 2$, not column $x = 5$.

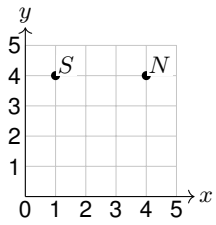
2. The height is $2 + 3 = 5$, so mark $Q(2, 5)$.



Problem 4

1. The grid shows $S(1, 4)$. Stay in row $y = 4$.

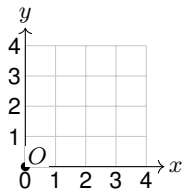
2. Farther from the y-axis means moving right. Use $1 + 3 = 4$ for x, giving $N(4, 4)$.



Problem 5

1. An x-axis point needs $y = 0$.

2. A y-axis point needs $x = 0$. Only $(0, 0)$ has both zero coordinates, so mark the origin.



Problem 6

1. Both entries of $(2, 3)$ and $(3, 2)$ are positive, so they are inside the quadrant.

2. $x = 0$ for $(0, 4)$ puts it on the y-axis. $y = 0$ for $(5, 0)$ puts it on the x-axis.

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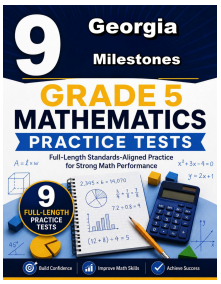

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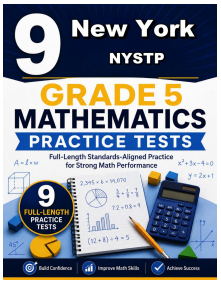

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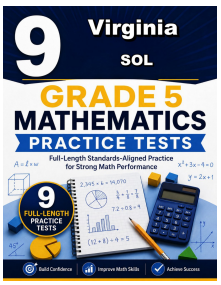

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