

9-1 Enrichment

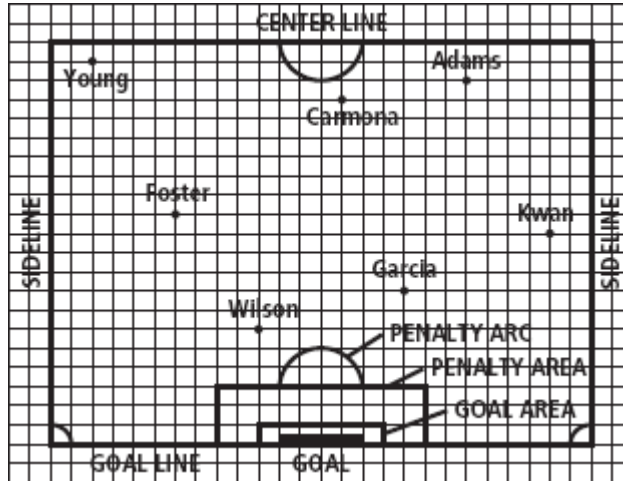
Translations

Soccer Field Translations

Below is a diagram of half a soccer field with seven offensive players. By passing and dribbling the ball, the players try to score by getting the ball into the goal. When a player passes, dribbles, or kicks the ball, the ball is being translated on the soccer field.

$T_{\langle x, y \rangle}(x, y)$ is a way to write a translation of a point or shape.

For example: $T_{\langle 8, -2 \rangle}(x, y)$ means to move the point or shape 8 units on the x-axis and -2 on the y axis. In other words, the point or shape moves 8 units to the right and two units down.



Use the diagram to complete each Exercise. Each unit on the grid represents one unit on a coordinate grid. Assume the ball's starting position is (x, y) .

- Garcia passes the ball to Wilson. What is the rule for this translation?
- Young passes the ball to Foster. What is the rule for this translation?
- Kwan passes the ball to Carmona. What is the rule for this translation?
- Adams passes the ball to Kwan, who then passes the ball to Garcia. Write two rules to describe these translations.
- Carmona passes the ball according to the rule $T_{\langle -8, -6 \rangle}(x, y)$. Who receives Carmona's pass?
- Wilson kicks the ball according to the rule $T_{\langle 3, -7 \rangle}(x, y)$. Will Wilson's score a goal if the Goalie does not block it?
- Young dribbles the ball according to the rule $T_{\langle 0, -10 \rangle}(x, y)$, and then passes the ball according to the rule $T_{\langle 8, -4 \rangle}(x, y)$. Who receives Young's pass?
- If Carmona kicks the ball toward the goal and the goalie stops it in the penalty area, which of the following rules could represent Carmona's kick?

A $T_{\langle -6, -12 \rangle}(x, y)$

C $T_{\langle 0, -12 \rangle}(x, y)$

B $T_{\langle -3, -15 \rangle}(x, y)$

D $T_{\langle 5, -15 \rangle}(x, y)$