SECTION Ready To Go On? Skills Intervention
1 B 1-6 Midpoint and Distance in the Coordinate Plane
Find these vocabulary words in Lesson 1–6 and the Multilingual Glossary.
Vocabulary
coordinate plane leg hypotenuse
Finding the Coordinates of a Midpoint Find the coordinates of the midpoint of \overline{KL} with endpoints $K(-9, 4)$ and $L(7, -6)$.
Write the Midpoint Formula.
Substitute the coordinates of K and L into the midpoint formula.
Simplify to find the coordinates of the midpoint.
Finding the Coordinates of an Endpoint <i>M</i> is the midpoint of \overline{PR} . <i>P</i> has coordinates (-7, 1), and <i>M</i> has coordinates (-1, -4). Find the coordinates of <i>R</i> .
The coordinates of R are unknown. Let the coordinates of R equal (x, y) .
Apply the Midpoint Formula. $(-1, -4) = \left(\frac{-7 + x}{2}, \frac{1 + y}{2}\right)$
Write and solve an equation to find the <i>x</i> -coordinate of <i>R</i> . $\frac{-7 + x}{2} = -1 \longrightarrow x = 2$
Write and solve an equation to find the <i>y</i> -coordinate of <i>R</i> . $\frac{1+y}{y} = $
The coordinates of <i>R</i> are (,).
Finding Distances in the Coordinate Plane Use the Distance Formula and the Pythagorean Theorem to find the distance, to the nearest tenth, from <i>K</i> to <i>L</i> .
Write the Distance Formula.
What are the coordinates of <i>K</i> ? of <i>L</i> ? Substitute the coordinates of <i>K</i> and <i>L</i> into the Distance Formula.
Simplify. The length of KL is
Write the Pythagorean Theorem Substitute the lengths of the legs into the Pythagorean Theorem to find the
length of the hypotenuse Simplify.
The length of the hypotenuse <i>KL</i> is

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