

# Unit 5 Lesson 11: More Solutions to Linear Equations

## 1 Coordinate Pairs (Warm up)

### Student Task Statement

For each equation choose a value for  $x$  and then solve to find the corresponding  $y$  value that makes that equation true.

1.  $6x = 7y$

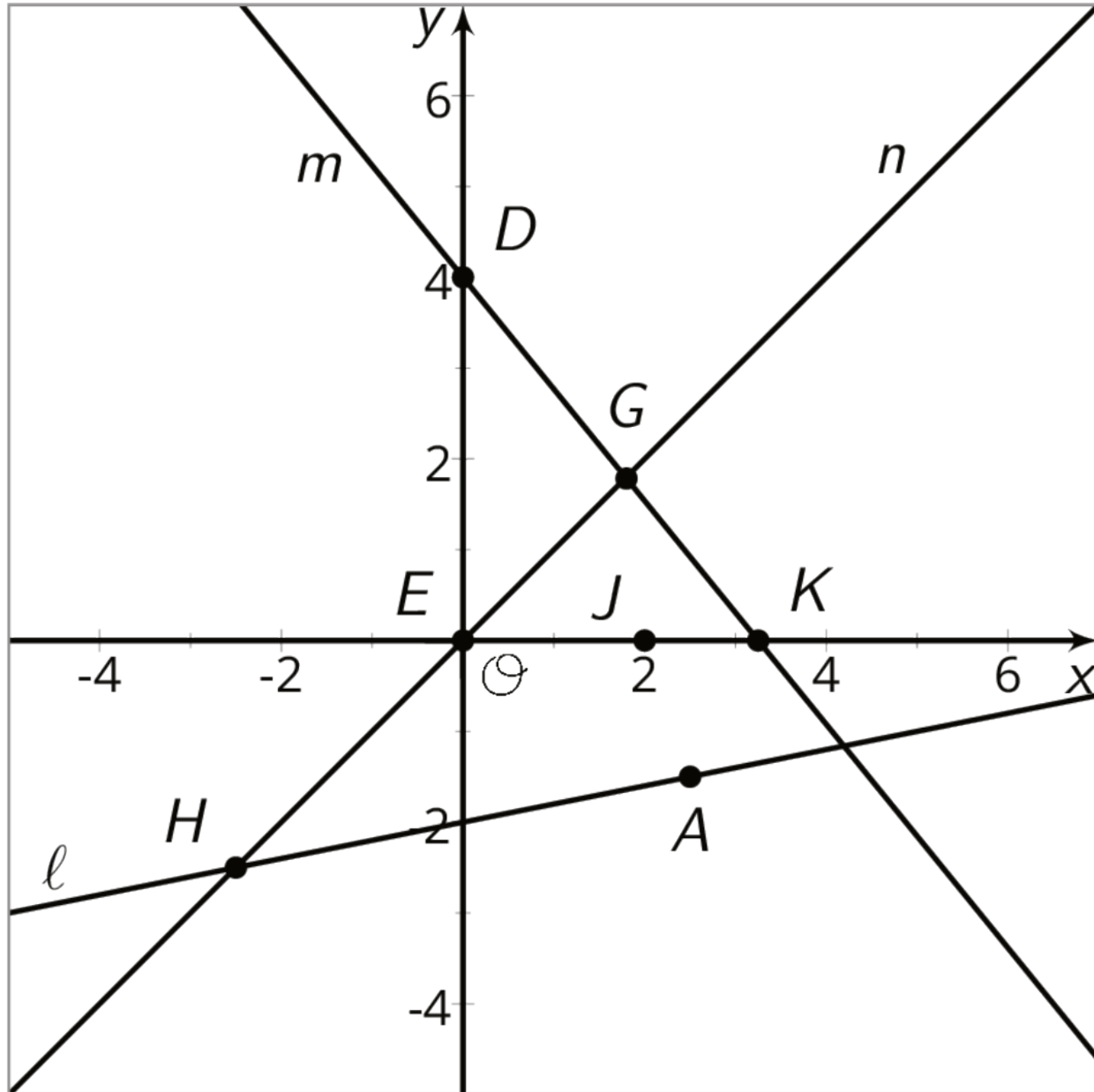
2.  $5x + 3y = 9$

3.  $y + 5 - \frac{1}{3}x = 7$

## 2 True or False: Solutions in the Coordinate Plane

### Student Task Statement

Here are graphs representing three linear relationships. These relationships could also be represented with equations.



For each statement below, decide if it is true or false. Explain your reasoning.

1.  $(4, 0)$  is a solution of the equation for line  $m$ .
2. The coordinates of the point  $G$  make both the equation for line  $m$  and the equation for line  $n$  true.
3.  $x = 0$  is a solution of the equation for line  $n$ .
4.  $(2, 0)$  makes both the equation for line  $m$  and the equation for line  $n$  true.
5. There is no solution for the equation for line  $\ell$  that has  $y = 0$ .
6. The coordinates of point  $H$  are solutions to the equation for line  $\ell$ .
7. There are exactly two solutions of the equation for line  $\ell$ .
8. There is a point whose coordinates make the equations of all three lines true.

After you finish discussing the eight statements, find another group and check your answers against theirs. Discuss any disagreements.

### 3 I'll Take an X, Please

#### Student Task Statement

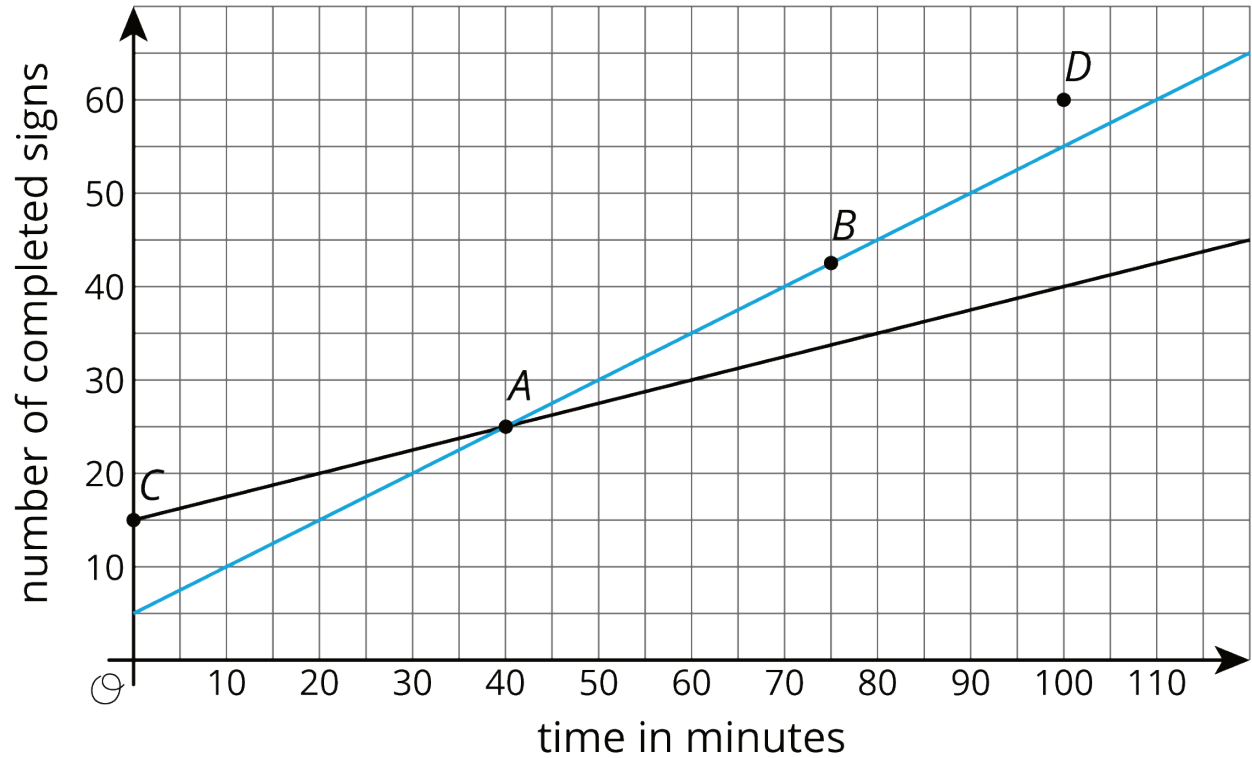
One partner has 6 cards labeled A through F and one partner has 6 cards labeled a through f. In each pair of cards (for example, Cards A and a), there is an equation on one card and a coordinate pair,  $(x, y)$ , that makes the equation true on the other card.

1. The partner with the equation asks the partner with a solution for either the  $x$ -value or the  $y$ -value and explains why they chose the one they did.
2. The partner with the equation uses this value to find the other value, explaining each step as they go.
3. The partner with the coordinate pair then tells the partner with the equation if they are right or wrong. If they are wrong, both partners should look through the steps to find and correct any errors. If they are right, both partners move onto the next set of cards.
4. Keep playing until you have finished Cards A through F.

## 4 Making Signs

### Student Task Statement

Clare and Andre are making signs for all the lockers as part of the decorations for the upcoming spirit week. Yesterday, Andre made 15 signs and Clare made 5 signs. Today, they need to make more signs. Each person's progress today is shown in the coordinate plane.



Based on the lines, mark the statements as true or false for each person.

point	what it says	Clare	Andre
<i>A</i>	At 40 minutes, I have 25 signs completed.		
<i>B</i>	At 75 minutes, I have 42 and a half signs completed.		
<i>C</i>	At 0 minutes, I have 15 signs completed.		
<i>D</i>	At 100 minutes, I have 60 signs completed.		