Vanessa buys a new large washing machine and a new large dryer for her laundromat. She wants to determine how many loads of laundry, \( x \), it will take before she has earned back the money she spent on each machine. The equation shown can be used to find the amount of money, \( y \), Vanessa still needs to earn.

**Washing Machine Equation**

\[ y = -5x + 1450 \]

Some **Dryer Information** is shown.
- The dryer cost \$1,120 to purchase.
- Vanessa charges \$4 for each load of laundry done in the dryer.

**Use the Washing Machine Equation to answer the question.**

What is the \( x \)-intercept of the equation \( y = -5x + 1450 \)? What does it represent in the situation?

**Maximum Number of Points: 2**

**Alignment:** 8.F.B.4.c
- Use functions to model relationships between quantities.
  - Use functions to model linear relationships between quantities.
    - Determine the \( x \)-intercept of a linear function.

**CORRECT ANSWER:**
- 290
  - OR
- (290, 0)

**SAMPLE CORRECT EXPLANATION:**
- The \( x \)-intercept represents the number of loads of laundry the washing machine will have to do before Vanessa has earned back the money she spent on the machine.

2 Points
- Student determines the \( x \)-intercept and explains what it represents in the situation.

1 Point
- Student determines the \( x \)-intercept but does not explain what it represents in the situation.
  - OR
- Student does not determine the \( x \)-intercept but does explain what it represents in the situation.

0 Points
- Blank
  - OR
- Student does not determine the \( x \)-intercept and does not explain what it represents in the situation.
Vanessa buys a new large washing machine and a new large dryer for her laundromat. She wants to determine how many loads of laundry, $x$, it will take before she has earned back the money she spent on each machine. The equation shown can be used to find the amount of money, $y$, Vanessa still needs to earn.

**Washing Machine Equation**

$$y = -5x + 1450$$

Some **Dryer Information** is shown.

- The dryer cost $1,120 to purchase.
- Vanessa charges $4 for each load of laundry done in the dryer.

Use the **Washing Machine Equation** and the **Dryer Information** to answer the question.

Vanessa writes an equation to show the relationship between the number of loads of laundry done in the dryer, $x$, and the amount of money she still has to earn before she has earned back all the money she spent on it, $y$. She then makes a system of equations using this equation and the washing machine equation. Explain how you know the system of equations must have exactly one solution without finding the actual solution.

**Maximum Number of Points: 1**

Alignment: 8.EEI.C.8.c

- Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations.
  - Analyze and solve systems of linear equations.
    - Explain why systems of linear equations can have one solution, no solution, or infinitely many solutions.

**SAMPLE CORRECT EXPLANATION:**

- The system has exactly one solution because the equations have different slopes.

1 Point

- Student provides a mathematically valid explanation.

0 Points

- Blank
  -OR–
- Student does not provide a mathematically valid explanation.