

Date: _____

Build expression inverse: Questions

(8)

Diagram illustrating a sequence of operations on a number line:

- Start at x .
- Operation 1: $+7$ (Add 7).
- Operation 2: $\times 5$ (Multiply by 5).

(9)

A number line diagram with three boxes. The first box contains the variable x . Above the line, an arrow points from the first box to the second box with the label $+2$. Another arrow points from the second box to the third box with the label $\times 4$. Below the line, an arrow points from the third box back to the second box, and another arrow points from the second box back to the first box.

(10)

x

$\div 7$

$- 9$

(11)

Diagram (11) shows a number line with three boxes. The first box contains the variable x . Above the first box is the operation $\div 7$ with an arrow pointing right. Above the second box is the operation $- 5$ with an arrow pointing right. Below the first box is an arrow pointing left. Below the second box is an arrow pointing left.

(12)

x

-1

$\div 7$

(13)

x $+2$ $\div 4$

(14)

x

$+2$

$\times 7$

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Build expression inverse: Answers

(1)

$$\begin{array}{ccccc}
 & \xrightarrow{\div 3} & & \xrightarrow{-9} & \\
 \boxed{x} & & \boxed{\frac{x}{3}} & & \boxed{\frac{x}{3} - 9} \\
 & \xleftarrow{\times 3} & & \xleftarrow{+9} &
 \end{array}$$

(8)

$$\begin{array}{ccccc}
 & \xrightarrow{+7} & & \xrightarrow{\times 5} & \\
 \boxed{x} & & \boxed{x + 7} & & \boxed{5(x + 7)} \\
 & \xleftarrow{-7} & & \xleftarrow{\div 5} &
 \end{array}$$

(2)

$$\begin{array}{ccccc}
 & \xrightarrow{\div 6} & & \xrightarrow{-7} & \\
 \boxed{x} & & \boxed{\frac{x}{6}} & & \boxed{\frac{x}{6} - 7} \\
 & \xleftarrow{\times 6} & & \xleftarrow{+7} &
 \end{array}$$

(9)

$$\begin{array}{ccccc}
 & \xrightarrow{+2} & & \xrightarrow{\times 4} & \\
 \boxed{x} & & \boxed{x + 2} & & \boxed{4(x + 2)} \\
 & \xleftarrow{-2} & & \xleftarrow{\div 4} &
 \end{array}$$

(3)

$$\begin{array}{ccccc}
 & \xrightarrow{\times 2} & & \xrightarrow{+7} & \\
 \boxed{x} & & \boxed{2x} & & \boxed{2x + 7} \\
 & \xleftarrow{\div 2} & & \xleftarrow{-7} &
 \end{array}$$

(10)

$$\begin{array}{ccccc}
 & \xrightarrow{\div 7} & & \xrightarrow{-9} & \\
 \boxed{x} & & \boxed{\frac{x}{7}} & & \boxed{\frac{x}{7} - 9} \\
 & \xleftarrow{\times 7} & & \xleftarrow{+9} &
 \end{array}$$

(4)

$$\begin{array}{ccccc}
 & \xrightarrow{\times 2} & & \xrightarrow{-2} & \\
 \boxed{x} & & \boxed{2x} & & \boxed{2x - 2} \\
 & \xleftarrow{\div 2} & & \xleftarrow{+2} &
 \end{array}$$

(11)

$$\begin{array}{ccccc}
 & \xrightarrow{\div 7} & & \xrightarrow{-5} & \\
 \boxed{x} & & \boxed{\frac{x}{7}} & & \boxed{\frac{x}{7} - 5} \\
 & \xleftarrow{\times 7} & & \xleftarrow{+5} &
 \end{array}$$

(5)

$$\begin{array}{ccccc}
 & \xrightarrow{\div 3} & & \xrightarrow{+5} & \\
 \boxed{x} & & \boxed{\frac{x}{3}} & & \boxed{\frac{x}{3} + 5} \\
 & \xleftarrow{\times 3} & & \xleftarrow{-5} &
 \end{array}$$

(12)

$$\begin{array}{ccccc}
 & \xrightarrow{-1} & & \xrightarrow{\div 7} & \\
 \boxed{x} & & \boxed{x - 1} & & \boxed{\frac{(x-1)}{7}} \\
 & \xleftarrow{+1} & & \xleftarrow{\times 7} &
 \end{array}$$

(6)

$$\begin{array}{ccccc}
 & \xrightarrow{\times 4} & & \xrightarrow{-2} & \\
 \boxed{x} & & \boxed{4x} & & \boxed{4x - 2} \\
 & \xleftarrow{\div 4} & & \xleftarrow{+2} &
 \end{array}$$

(13)

$$\begin{array}{ccccc}
 & \xrightarrow{+2} & & \xrightarrow{\div 4} & \\
 \boxed{x} & & \boxed{x + 2} & & \boxed{\frac{(x+2)}{4}} \\
 & \xleftarrow{-2} & & \xleftarrow{\times 4} &
 \end{array}$$

(7)

$$\begin{array}{ccccc}
 & \xrightarrow{\times 8} & & \xrightarrow{+3} & \\
 \boxed{x} & & \boxed{8x} & & \boxed{8x + 3} \\
 & \xleftarrow{\div 8} & & \xleftarrow{-3} &
 \end{array}$$

(14)

$$\begin{array}{ccccc}
 & \xrightarrow{+2} & & \xrightarrow{\times 7} & \\
 \boxed{x} & & \boxed{x + 2} & & \boxed{7(x + 2)} \\
 & \xleftarrow{-2} & & \xleftarrow{\div 7} &
 \end{array}$$