The table shows the relationship between $y$, the cost to rent a boat, and $x$, the amount of time the boat is rented.

Which graph best represents the relationship between $x$ and $y$ shown in the table?
Building Reasoning: Multiplicative to Proportional to Algebraic Thinking – Selected Released STAAR® Items

**8.5(B)** represent linear non-proportional situations with tables, graphs, and equations in the form of \( y = mx + b \), where \( b \neq 0 \)

18 2018 – Q15
18 Rudolf has 15 toys in his toy box, and he adds 2 new toys every month. Based on this information, which representation best shows the relationship between the number of toys Rudolf has in his toy box, \( y \), and the number of months that have passed, \( x \)?

<table>
<thead>
<tr>
<th>Rudolf’s Toys</th>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
<td>23</td>
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<tr>
<td>5</td>
<td>19</td>
<td>25</td>
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<td>6</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>8</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>9</td>
<td>23</td>
<td>33</td>
</tr>
</tbody>
</table>

**8.5(H)** Identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems

2018 – Q30

30 Which situation could NOT represent a proportional relationship?

F. The number of gallons of water in \( x \) barrels with 42 gallons of water in each barrel
G. The amount an employee who makes $8.50 per hour earns in \( h \) hours
H. The weight in \( w \) weeks of a puppy that gains 2 pounds per week if its starting weight is 8 pounds
J. The cost of purchasing \( p \) pounds of bananas for $0.55 per pound

2018 – Q43

43 The graph of a linear function is shown on the grid.

The graph of a linear function is shown on the grid.

Which equation is best represented by this graph?

A. \( y = 7 - 3(x - 4) \)
B. \( y = 1 - 3(x + 2) \)
C. \( y = 4 - 3(x + 7) \)
D. \( y = -2 - 3(x - 1) \)

2018 – Q26

26 Write linear equations in two variables given a table of values, a graph, and a verbal description.

A. For the restaurant jars of tomato sauce are stored in boxes in the pantry. Each box contains 5 jars of tomato sauce. A cook uses 2 jars from 1 of the boxes.

Which function shows the relationship between \( y \), the total number of jars of tomato sauce remaining in the pantry, and \( x \), the number of boxes in the pantry?

A. \( y = 8x + 6 \)
B. \( y = 8x \)
C. \( y = 8x - 2 \)
D. \( y = 6x \)

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