

Name: _____ Class: _____ Date: _____

**Incoming 8th Grade Summer Work
MS 181 Pablo Casals**

Dear Future 8th Graders,

The math work that you will find in this packet must be completed over the summer to help you succeed as an 8th grade math student.

Please do not leave all of the work to be completed until the very end of the summer. Complete some problems each week and avoid hours worth of math work at the end of the summer.

Please make sure to show all of your work for solving problems. Work will be graded.

Please provide the following information:

7th Grade Class: _____

7th Grade Math Teacher: _____

We hope you have a wonderful summer! We are so excited to have you in the 7th grade!

Sincerely,

Mr. Warnock

Principal

Ms. Madden, Ms. Neill & All of the 8th Grade Math Teachers

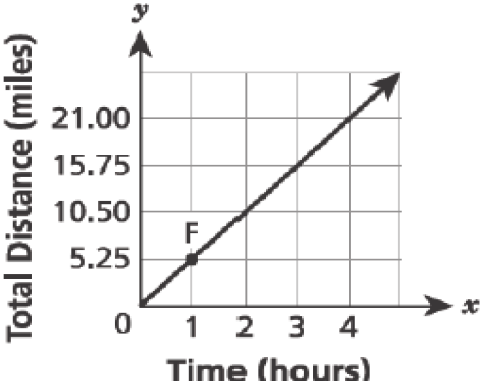
Assistant Principal Math Coach

Incoming 8th Grade Summer Work
MS 181 Pablo Casals

Directions:

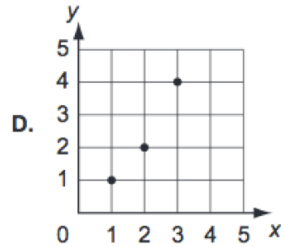
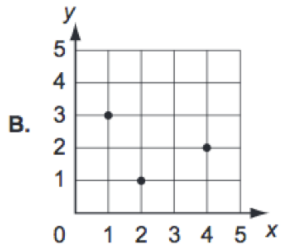
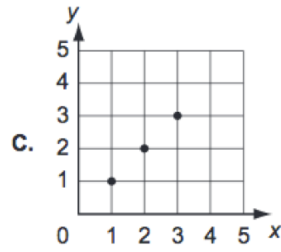
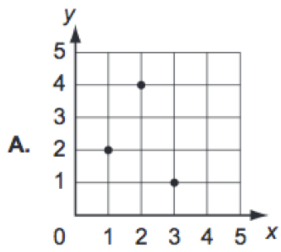
- Read each problem carefully
- Show all work in the space provided
 - Showing work is part of your grade, please make sure that it is there! If you are using a calculator, write down the equation that you punched into your calculator in the “Show your work” box.
- Identify your final answer by circling the correct choice and writing it on the line next to it

Question	Show your work
<p>_____ 1. Which value of m makes the inequality true?</p> <p style="text-align: center;">$3m - 4 < 11$</p> <p>A. 4 B. 5</p> <p>C. 6 D. 7</p> <p>6.EE.5</p>	
<p>_____ 2. Which expression is equivalent to $4 - (-7)$?</p> <p>A. $7 + 4$ B. $-7 - 4$</p> <p>C. $4 - 7$ D. $-4 + 7$</p> <p>7.NS.1c</p>	
<p>_____ 3. Which expression is equivalent to: $9(9m + 3t)$?</p> <p>A. $18m + 3t$ B. $81m + 3t$</p> <p>C. $18m + 12t$ D. $81m + 27t$</p> <p>6.EE.3</p>	
<p>_____ 4. What is the product of $(-\frac{1}{4}) \times (-\frac{3}{7})$?</p> <p>A. $-\frac{7}{12}$ B. $-\frac{3}{28}$</p> <p>C. $\frac{3}{28}$ D. $\frac{7}{12}$</p> <p>7.NS.2a</p>	

Question	Show your work
<p>_____ 5. The cost of oranges in a grocery store is directly proportional to the number of oranges purchased. Jerri paid \$2.52 for 6 oranges. If p represents the cost, in dollars, and n represents the number of oranges purchased, which equation best represents this relationship?</p> <p>A. $p = 0.42n$ B. $p = 6n$</p> <p>C. $p = 2.52n$ D. $p = 15.12n$</p> <p>7.RP.2c</p>	
<p>_____ 6. The graph shows the total distance, in miles, traveled by a towboat over time, in hours.</p> <p style="text-align: center;">AVERAGE SPEED OF TOWBOAT</p>  <p>Which statement best describes the meaning of the coordinates of point F on the graph?</p> <p>A. It shows the unit rate of the graph in hours per mile.</p> <p>B. It shows the unit rate of the graph in miles per hour.</p> <p>C. It shows the time, in hours, it takes the towboat to travel 1 mile.</p> <p>D. It shows the distance traveled, in miles, by the towboat after 5.25 hours.</p> <p>7.RP.2c</p>	

Question**Show your work**

_____ 7. Which coordinate grid shows the points (1, 2), (2, 4), and (3, 1) graphed correctly?



6.G.3

_____ 8. Last week Len spent \$18 to bowl 4 games. This week he spent \$27 to bowl 6 games. Len owns his bowling ball and shoes, so he only has to pay for each game that he bowls. If each of these bowling games costs the same amount of money, what is the constant of proportionality between the money spent and the number of games played?

- A. 1.5 B. 2.0
C. 4.5 D. 9.0

7.RP.2b

_____ 9. The outside temperature in a town is -20 degrees Fahrenheit. What change in temperature, in degrees Fahrenheit, would bring the outside temperature to 0 degrees Fahrenheit?

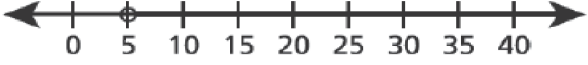
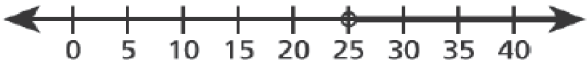
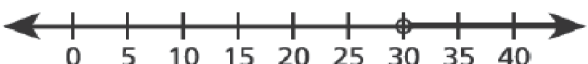
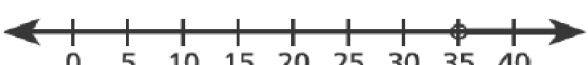
- A. -21 B. -20
C. 0 D. 20

6.NS.5

Question	Show your work
<p>_____ 10. Laticia randomly selected 25% of the seventh-grade students in her school and asked them their favorite season. Of the students surveyed, 51 chose summer as their favorite season. Based on the data, what is the most reasonable prediction of the number of seventh-grade students in her school who would choose summer as their favorite season?</p> <p>A. 15 B. 75</p> <p>C. 150 D. 200</p> <p>7.SP.2</p>	
<p>_____ 11. Which expression is equivalent to: $8c + 6 - 3c - 2$?</p> <p>A. $5c + 4$ B. $5c + 8$</p> <p>C. $11c + 4$ D. $11c + 8$</p> <p>7.EE.1</p>	
<p>_____ 12. Josh has c coins. Nick has 4 fewer coins than 3 times as many coins as Josh. Which expression can be used to show how many coins Nick has?</p> <p>A. $3c - 4$ B. $3 - 4c$</p> <p>C. $4c - 3$ D. $4 - 3c$</p> <p>6.EE.6</p>	
<p>_____ 13. Which expression represents the expression in expanded form:</p> $3 \left(\frac{5}{4}n + 1.8 \right)$ <p>A. $5.55n$ B. $9.15n$</p> <p>C. $3.75n + 1.8$ D. $3.75n + 5.4$</p> <p>7.EE.1</p>	

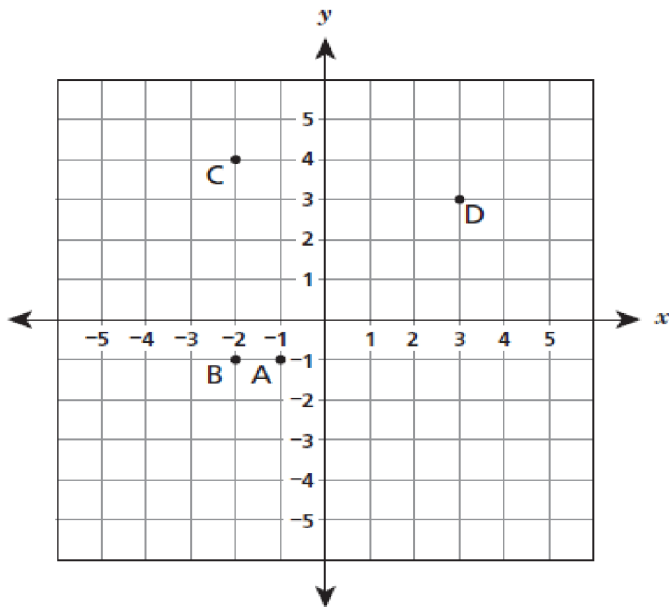
Question	Show your work
<p>_____ 14. Which expression is equivalent to $\frac{3}{5}$?</p> <p>A. $3(5)$ B. $3 + 5$</p> <p>C. $3 \div 5$ D. $3 - 5$</p> <p>5.NF.3</p>	
<p>_____ 15. Ben earns \$50 and \$12 for each delivery he makes. He wants to earn more than \$155 today. What is the least number of deliveries he must make to reach his goal?</p> <p>A. 8 B. 9</p> <p>C. 10 D. 11</p> <p>7.EE.4b</p>	
<p>_____ 16. Ms. Wilson is buying packages of pencils. Each package costs \$11.52 and contains 96 pencils. What is the unit price of a pencil?</p> <p>A. \$0.12 B. \$0.96</p> <p>C. \$1.20 D. \$1.92</p> <p>6.RP.3b</p>	
<p>_____ 17. What is the value of the expression below when $z = 7$?</p> <p style="text-align: center;">$3z - 3$</p> <p>A. 12 B. 18</p> <p>C. 21 D. 34</p> <p>6.EE.2c</p>	

Question	Show your work
<p>_____ 18. Mike took a taxi from his home to the airport. The taxi driver charged an initial fee of \$6 plus \$3 per mile. The total fare was \$24, not including the tip. How many miles did Mike travel by taxi on this ride?</p> <p>A. 2 B. 6</p> <p>C. 8 D. 10</p> <p><i>7.EE.4a</i></p>	
<p>_____ 19. Manny goes bowling.</p> <ul style="list-style-type: none"> ● He has \$25.00 to spend. ● He spends \$4.25 to rent shoes. ● He spends \$2.50 for each game he bowls. <p>Which inequality can Manny use to determine the greatest number of games he can bowl?</p> <p>A. $2.5 + 4.25x \geq 25$ B. $4.25 + 2.5x \geq 25$</p> <p>C. $2.5 + 4.25x \leq 25$ D. $4.25 + 2.5x \leq 25$</p> <p><i>7.EE.7b</i></p>	
<p>_____ 20. Which expression is equivalent to:</p> <p style="text-align: center;">$4.8 + 2.2w - 1.4w + 2.4$</p> <p>A. $0.4(6 + 2w)$ B. $0.8(9 + w)$</p> <p>C. $1.6(3 + 2w)$ D. $3.6(2 + w)$</p> <p><i>7.EE.1</i></p>	
<p>_____ 21. Clara goes miniature golfing. She pays \$7.50 for an admission ticket and \$6.25 for each round she golfs. The total amount Clara pays for admission and the number of rounds she golfs is \$26.25, which equation can be used to determine the number of rounds, x, that Clara golfs?</p> <p>A. $6.25x + 7.50 = 26.25$ B. $6.25x - 7.50 = 26.25$</p> <p>C. $7.50x + 6.25 = 26.25$ D. $7.50x - 6.25 = 26.25$</p> <p><i>7.EE.4a</i></p>	

Question	Show your work
<p>_____ 22. Yolanda participated in a walkathon in which each kilometer walked raised \$10 for charity. Her goal was to raise more than \$300 on Saturday and Sunday. She raised \$50 on Saturday. Which graph shows all the distances in kilometers that Yolanda could have walked on Sunday to reach her goal?</p> <p>A </p> <p>B </p> <p>C </p> <p>D </p> <p>7.EE.7b</p>	
<p>_____ 23. Which expression is equivalent to:</p> <p style="text-align: center;">$-3(4x - 2) - 2x$</p> <p>A. $-8x$ B. $-16x$</p> <p>C. $-14x - 2$ D. $-14x + 6$</p> <p>7.EE.1</p>	
<p>_____ 24. Anna is a painter. She charges \$130 for paint supplies and \$25 for each hour, h, she works. Which expression represents the total amount Anna charges?</p> <p>A. $(130 + 25)h$ B. $130 + 25h$</p> <p>C. $130h + 25$ D. $130 + (25 + h)$</p> <p>7.EE.2</p>	

Question**Show your work**

25. Point G is the point (3, -1)



Which point is 5 units from point G?

- A. Point A B. Point B
C. Point C D. Point D

6.NS.8

26. Which expression is equivalent to

$$-\frac{1}{3}(6x + 15) - 3 ?$$

- A. $-2x + 12$ B. $-2x + 2$
C. $-2x - 2$ D. $-2x - 8$

7.EE.1

Question	Show your work
<p>_____27. This month, Drew worked six hours less than twice the number of hours, h, he worked last month. What expression represents the number of hours Drew worked this month?</p> <p>A. $2 - 6h$ B. $2h - 6$</p> <p>C. $6 - 2h$ D. $6h - 2$</p> <p>7.EE.2</p>	
<p>_____28. Solve</p> $0.5x + 78.2 = 287$ <p>A. $x = 104.4$ B. $x = 417.6$</p> <p>C. $x = 495.8$ D. $x = 730.4$</p> <p>7.EE.4a</p>	
<p>_____29. Which expression is equivalent to</p> $-3(2x - 8) + 4x?$ <p>A. $-2x - 8$ B. $-2x + 24$</p> <p>C. $-10x - 8$ D. $-10x + 24$</p> <p>7.EE.A.1</p>	
<p>_____30. Which value of x makes the equation true?</p> $4x - 8 = 4$ <p>A. 60 B. 72</p> <p>C. 100 D. 120</p> <p>6.EE.5</p>	

Question**Show your work**

_____31. What is the solution to the equation shown below?

$$2.5(x + 5) = 7.5x - 0.5$$

- A. $x = 2.6$ B. $x = 1.1$
C. $x = -2.6$ D. $x = -1.1$

8.EE.7b

_____32. At a factory, the cost of making different numbers of toothbrushes is shown in the table below.

COST OF TOOTHBRUSHES

Number of Toothbrushes	3	6	9	12
Cost (dollars)	\$4.50	\$9.00	\$13.50	\$18.00

A linear function models the cost based on the number of toothbrushes made. Which statement about the rate of change (**slope**) of this function is true?

- A. The cost increases by \$1.50 for each additional toothbrush made.
B. The cost increases by \$4.50 for each additional toothbrush made.
C. The cost increases by \$9.00 for each additional 3 toothbrushes made.
D. The cost increases by \$18.00 for each additional 3 toothbrushes made.

8.EE.5

_____33. What is the value of the expression?

$$\frac{3^2 \cdot (2^3 + 4)}{2^2}$$

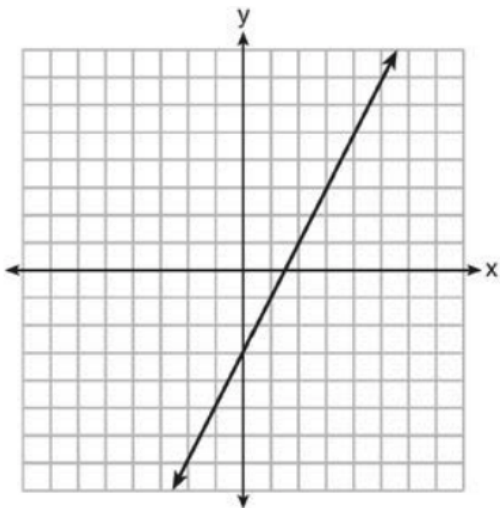
- A. 10 B. 15
C. 19 D. 27

6.EE.1

Question	Show your work
<p>_____ 34. The math department needs to buy new textbooks and laptops for the computer science classroom. The textbooks cost \$116.00 each, and the laptops cost \$439.00 each. If the math department has \$6500 to spend and purchases 30 textbooks, how many laptops can they buy?</p> <p>A. 6 B. 7</p> <p>C. 11 D. 12</p> <p><i>A.CED.A.1</i></p>	
<p>_____ 35. What is the solution to</p> $2 + 3(2a + 1) = 3(a + 2)$ <p>A. $\frac{1}{7}$ B. $\frac{3}{7}$</p> <p>C. $\frac{1}{3}$ D. $-\frac{1}{7}$</p> <p><i>A.REI.B</i></p>	
<p>_____ 36. What is the solution to the equation shown below?</p> $-\frac{1}{3}(6y + 6) + 21 = 3y$ <p>A. $y = \frac{27}{5}$ B. $y = -\frac{9}{5}$</p> <p>C. $y = -\frac{23}{5}$ D. $y = \frac{19}{5}$</p> <p><i>8.EE.7b</i></p>	

Question**Show your work**

_____ 37. Which function has the same y-intercept as the graph below?



A. $y = \frac{12-6x}{4}$

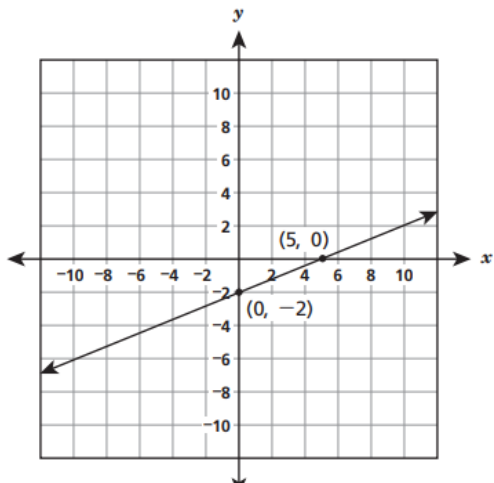
B. $y = 2x - 9$

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

D. $y = 6x - 3$

F.IF.B.3

_____ 38. Which equation represents the line shown on the coordinate grid below?



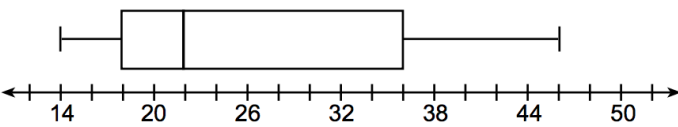
A. $y = \frac{2}{5}x - 2$

B. $y = \frac{2}{5}x + 5$

C. $y = -\frac{2}{5}x - 2$

D. $y = -\frac{2}{5}x + 5$

8.EE.6

Question	Show your work
<p>_____39. Given $7x + 2 > 58$, which number is <i>not</i> in the solution set?</p> <p>A. 6 B. 10</p> <p>C. 8 D. 12</p> <p><i>A.REI.B.3</i></p>	
<p>_____40. What is the value of the third quartile in the box plot shown below?</p>  <p>A. 18 B. 36</p> <p>C. 22 D. 46</p> <p><i>S.ID.A</i></p>	
<p>_____41. What number is not part of the solution set to the inequality below?</p> $w - 10 < 16$ <p>A. 11 B. 15</p> <p>C. 26 D. 27</p> <p><i>6.EE.5</i></p>	

Question	Show your work												
<p>_____ 42. Kendal bought x boxes of cookies to bring to a party. Each box contains 12 cookies. She decides to keep two boxes for herself. She brings 60 cookies to the party. Which equation can be used to find the number of boxes, x, Kendal bought?</p> <p>A. $2x - 12 = 60$ B. $12x - 2 = 60$</p> <p>C. $12x - 24 = 60$ D. $24 - 12x = 60$</p> <p><i>A.CED.A.1</i></p>													
<p>_____ 43. Nicci's sister is 7 years less than twice Nicci's age, a. The sum of Nicci's age and her sister's age is 41. Which equation represents this relationship?</p> <p>A. $a + (7 - 2a) = 41$ B. $a + (2a - 7) = 41$</p> <p>C. $2a - 7 = 41$ D. $a = 2a - 7$</p> <p><i>A.CED.A.1</i></p>													
<p>_____ 44. Patricia is trying to compare the average rainfall of New York to that of Arizona. A comparison between these two states for the months of July through September would be best measured in</p> <p>A. Feet per hour B. Inches per hour</p> <p>C. Inches per month D. Feet per month</p> <p><i>N.Q.A.2</i></p>													
<p>_____ 45. At Berkeley Central High School, a survey was conducted to see if students preferred cheeseburgers, pizza, or hot dogs for lunch. The results of this survey are shown in the table below.</p> <table border="1"> <thead> <tr> <th></th> <th>Cheeseburgers</th> <th>Pizza</th> <th>Hot Dogs</th> </tr> </thead> <tbody> <tr> <th>Females</th> <td>32</td> <td>44</td> <td>24</td> </tr> <tr> <th>Males</th> <td>36</td> <td>30</td> <td>34</td> </tr> </tbody> </table> <p>Based on this survey, what percent of the students preferred pizza?</p> <p>A. 30 B. 44</p> <p>C. 37 D. 74</p> <p><i>S.ID.B</i></p>		Cheeseburgers	Pizza	Hot Dogs	Females	32	44	24	Males	36	30	34	
	Cheeseburgers	Pizza	Hot Dogs										
Females	32	44	24										
Males	36	30	34										

Question	Show your work
<p>_____46. Which of the equations below have the same solution?</p> <p>I. $10(x - 5) = -15$</p> <p>II. $4 + 2(x - 2) = 9$</p> <p>III. $\frac{1}{3}x = \frac{3}{2}$</p> <p>A. I and II, only B. II and III, only</p> <p>C. I and III, only D. I, II, and III</p> <p><i>A.REI.B</i></p>	
<p>_____47. What is the solution to the system of equations below?</p> <p>$y = 2x + 8$</p> <p>$3(-2x + y) = 12$</p> <p>A. No Solution B. Infinite Solutions</p> <p>C. $(-1, 6)$ D. $(\frac{1}{2}, 9)$</p> <p><i>A.REI.C.6</i></p>	
<p>_____48. A cook uses 2.5 cups of flour for each ounce of butter in a recipe. Which graph represents the relationship between the amount of flour and the amount of butter in the recipe?</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <p>A</p> <p style="text-align: center;">IPE</p> </div> <div style="width: 50%;"> <p>C</p> <p style="text-align: center;">IPE</p> </div> <div style="width: 50%;"> <p>B</p> <p style="text-align: center;">RECIPE</p> </div> <div style="width: 50%;"> <p>D</p> <p style="text-align: center;">IPE</p> </div> </div> <p><i>8.EE.5</i></p>	

Question**Show your work**

_____ 49. A line contains the points (4, 2) and (0, -1). What is the equation of the line?

A. $y = 2x - 6$

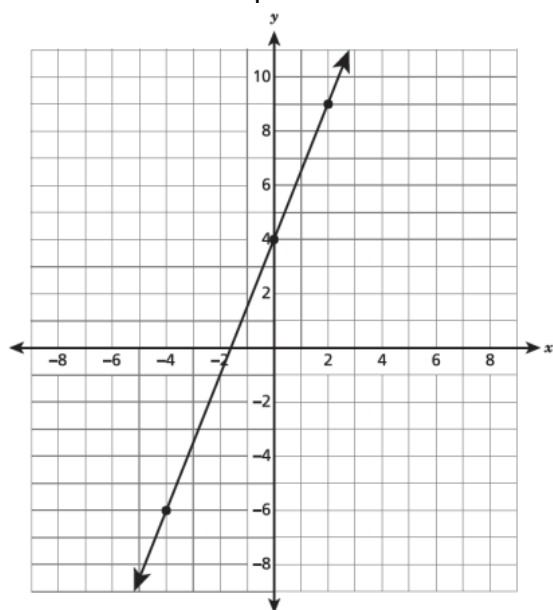
B. $y = \frac{3}{4}x - 1$

C. $y = \frac{1}{4}x + 1$

D. $y = \frac{4}{3}x - \frac{10}{3}$

8.EE.6

_____ 50. Which equation represents the line shown on the coordinate plane below?



A. $y = \frac{2}{5}x + 4$

B. $y = \frac{2}{3}x + 4$

C. $y = \frac{3}{2}x + 4$

D. $y = \frac{5}{2}x + 4$

8.EE.6

Billy is comparing gasoline prices at two different gas stations.

- At the first gas station, the equation $c = 2.80g$ gives the relationship between g , the number of gallons of gasoline, and c , the total cost, in dollars.
- At the second gas station, the cost of 2.5 gallons of gasoline is \$8.30, and the cost of 5 gallons of gasoline is \$16.60.

How much money, per gallon, would Billy save by going to the less expensive gas station?

Show your work.

An office supply store sells boxes of pencils. Each box contains 160 pencils. Write an equation that represents the total number of pencils, y , in x boxes.

Equation _____

If $x = 12$ for one day of sales, use your equation to find the total number of pencils the supply store sells.

Show your work.

Solve the equation below for d .

$$0.2(d - 6) = 0.3d + 5 - 3 + 0.1d$$

Show your work.

Determine the number of solutions that exist to the equation below.

$$8(j - 4) = 2(4j - 16)$$

Show your work.

The steps a student took to solve an equation are shown below.

$$\frac{3}{4}(-8x + 20) = -8(-x - 3)$$

Step 1: $-6x + 15 = 8x + 24$

Step 2: $15 = 2x + 24$

Step 3: $-9 = 2x$

Step 4: $x = -\frac{9}{2}$

What error did the student make and what is the correct value of x ?

Answer $x =$ _____

Explain your answer.
