Name_____ ID: 1
3.4 ~ Combining Linear Equations
Past due on_____ Period_____

Write a linear function in two different ways to represent each problem situation. Refer to the 3.4 example "Writing a Linear Equation Using the Distributive Property" in the Chapter 3 Summary.

1) Mae paints and sells ceramic vases for $35 each. Each month she typically breaks 3 vases in the kiln. Write a linear function that represents the total amount Mae earns each month selling vases taking into account the value of the vases she breaks.

2) Izzy makes and sells fruit pies at her bakery for $12.99 each. Each month she gives away 4 pies as samples. Write a linear function that represents the total amount Izzy earns each month selling fruit pies taking into account the value of the pies she gives away as samples.

3) Mattie sells heads of lettuce for $1.99 each from a roadside farmer's market stand. Each week she loses 2 heads of lettuce due spoilage. Write a linear function that represents the total amount Mattie earns each week selling heads of lettuce taking into account the value of the lettuce she loses due to spoilage.

4) Carlos prints and sells T-shirts for $14.99 each. Each month 5 T-shirts are misprinted and cannot be sold. Write a linear function that represents the total amount Carlos earns each month selling T-shirts taking into account the value of the T-shirts that cannot be sold.

5) Odell prints and sells posters for $20 each. Each month 1 poster is misprinted and cannot be sold. Write a linear function that represents the total amount Odell earns each month taking into account the value of the poster that cannot be sold.

6) Emilio builds and sells homemade wooden toys for $40 each. Each month he donates 3 toys to a children's hospital. Write a linear function that represents the total amount Emilio earns each month selling toys taking into account the toys he donates.

Solve each equation for the indicated variable. Refer to the 3.3 example "Converting Literal Equations to Solve for a Specific Variable" in the Chapter 3 Summary.

7) $x + m = p - n$, for x

8) $ma = n - p$, for a

9) $xk = \dfrac{w}{v}$, for x

10) $\dfrac{c}{a} = d - r$, for a

Solve each equation.

11) $2x + 24 = x + 8$

12) $17p - 1 = 15p - 13$
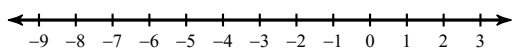
13) $-15 + 15b = -36 + 12b$

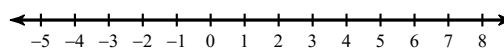14) $14n - 29 = 1 + 11n$

15) $11b - 16 = 29 + 16b$

16) $-37 - 18v = -5 - 20v$

Solve each compound inequality and graph its solution set. Refer to the 2.4 example "Solving Compound Inequalities" in the Chapter 2 Summary.
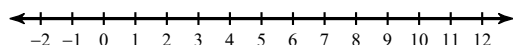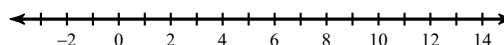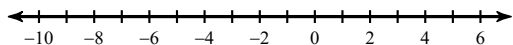
17) $-14 < 3x + 10 < 7$

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←+—+—+—+—+—+—+—+—+—+—+—+—+→
 −9 −8 −7 −6 −5 −4 −3 −2 −1  0  1  2  3
```

18) $-7 - 2n < -13$ or $7n - 9 < -23$

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←+—+—+—+—+—+—+—+—+—+—+—+—+—+→
 −5 −4 −3 −2 −1  0  1  2  3  4  5  6  7  8
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19) $7 + 3x \geq 31$ or $8x - 1 \leq 7$

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←+—+—+—+—+—+—+—+—+—+—+—+—+—+→
 −2 −1  0  1  2  3  4  5  6  7  8  9 10 11 12
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20) $8n + 9 < 25$ or $9n + 1 \geq 91$

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←+—+—+—+—+—+—+—+—+—+→
 −2    0    2    4    6    8   10   12   14
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21) $-83 \leq 7 + 10x \leq 47$

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←+—+—+—+—+—+—+—+—+→
 −10   −8   −6   −4   −2    0    2    4    6
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22) $-25 \leq 9n - 7 \leq 20$

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←+—+—+—+—+—+—+—+—+—+—+—+—+→
 −5 −4 −3 −2 −1  0  1  2  3  4  5  6  7
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