Math Study Guide 7th Grade Unit 2

1. Solve: 5x + 10 = -15 **5*x* = -25** CC.7.EE.3

   ***x* = -5**

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2. Simplify: $(-4a + b - 2c) - (3a + 2b - c)$ CC.7.EE.1

   -4a + b -2c -3a -2b + c

   -7a –b -c

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3. Rewrite the expression using the distributive property: $12x + 18$ (both 12 & 18 are divisible by 6,so…) CC.7.EE.2

   6 (2x + 3)

   3(4x+6) or 2(6x+9) are also correct, but the BEST answer is 6(2x + 3)

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4. Rewrite the expression using the distributive property. $30x + 6$ (both 30 & 6 are divisible by 6,so…) CC.7.EE.2

   6 (5x + 1)

   3(10x+2) or 2(15x+3) are also correct, but the BEST answer is 6(5x + 1)

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5. Your bank account balance was $235.24. After 2 checks were cashed (each for the same amount) your balance is now -$45.58. What was the amount of each of those checks? CC.7.EE.4

   Step 1: 235.24 – (-45.58) = 280.82 is total of both checks
   Step 2: 280.82 ÷ 2 = 140.41 , so **each of the checks was for $140.41**

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6. Cam bought the items listed on the sign. If he was charged $42.25 for which item was he charged twice? CC.7.EE.4

   $42.25 – 29.50 = 12.75, so **he was charged twice for a hat.**

Socks….	$4.50
Hats…..	$12.75
t-shirts	$12.25
Total	$29.50

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7. Rich bought 5 cupcakes and one pie. He knows his total bill and knows the pie was $6.89, but he wants to find the price of the cupcakes. How can he determine the price of each cupcake? CC.7.EE.4

   If he subtracts the pie from the total price, the amount that's left is 5 cupcakes. Then if he divides that by 5 he'll find out how much each cupcake cost.

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8. Which choice is equivalent to the expression $-2(5y - x) + 3(-6y) + 2x$?
   CC.7.EE.2

   A. *-16y – 5x* B. *-16y – 7x* C. *-28y + 4x* **D. *-28y + 8x***

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9. Solve: -3x + 12 = 48 CC.7.EE.4

   -12 -12
   -3*x* = 36 (now divide both sides by -3)
   ***x* = -12**

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10. Solve: -2(*x* – 4) = -8 CC.7.EE.4

    -2*x* + 8 = -8
    -8 -8
    -2*x* = -16 (now divide both sides by -2)
    ***x*= 8**

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11. Evaluate: $1.5x + 120 \geq 270$ CC.7.EE.4

    -120 -120
    1.5*x* ≥ 150
    ***x* ≥ 100**

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12. Bo Peep needs to buy 10 new sheep
    - Farm M: one sheep costs $20 (10 sheep · $20 = $200
    - Farm Q: set of 5 sheep costs $75 $75 (5 sheep) + $75 (5 sheep) = $150 (10 sheep)

How much money will Bo Peep save if she goes with Farm Q? 200 – 150 = $50

Bo Peep would save $50 if she buys from Farm Q. CC.7.EE.4

13. Which problem can be solved using the equation: $9x + 14 = 100$? CC.7.EE.4

A. 9 dogs and 14 cats cost $100.
B. Ty wants to buy 14 dogs, but they cost $100, how much more does he need?
C. ***Ty has saved $14 and he earns $9 each week. How many weeks will it take till he has $100 to buy a pet?***

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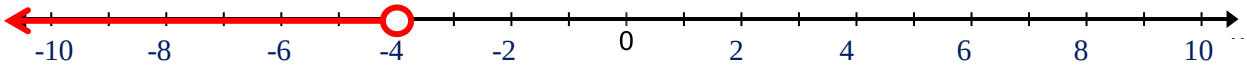
14. Label the number line below and draw the solution set for $x + 12 < 8$? CC.7.EE.4

-12 -12

x < -4



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15. Which inequality represents "nine more than three times a number is greater than 21". CC.7.EE.4

A. $9n > 21$ B. $9 + 3 > 21$ **C. $3n + 9 > 21$** D. $9n + 3 > 21$

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16. Frank has saved $15 towards the $95 phone he want to buy. He makes $5 per week delivering papers. How many weeks must he work until he has enough money? CC.7.EE.4

95 is needed
-15 that he has
80 more he needs

*He makes $5 per week, so I need to divide 80 by 5 to find how many weeks it will take. The answer is **16 weeks***

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17. If you have $x - 4$ and subtract $\frac{1}{4}x + 5$ from it, the result is: CC.7.EE.1

$-\left(\frac{1}{4}x + 5\right)$

$\frac{3}{4}x - 9$

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18. Which of the following equations is equivalent to $9x - 12 = 36$? CC.7.EE.2

A. $9x = 24$ B. $9x = 48$ C. $x - 12 = 4$ D. . $x + 9 = 4$

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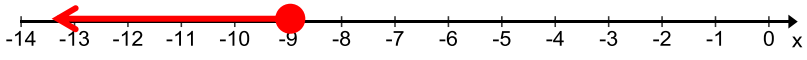
19. Graph the inequality: $5y + 3 \leq -42$ CC.7.EE.4

-3 -3

$5y \leq -45$

$y \leq -9$



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20. Mel cleans houses. CC.7.EE.4

- She earns $7.50 every hour that she dusts. ***7.50 · 2 = 15***
- She earns $10.00 every hour that she scrubs floors. ***10.00 · 1 ½ = 15***
- She scrubbed floors for 1 ½ hours and dusted for 2 hours.

How much money did Mel earn? ***15(dusting) + 15(scrubbing) = $30***

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21. Label and graph the inequality: $4x - 8 > 24$ CC.7.EE.4

+8 +8

4x > 32 (divide both sides by 4) ***x > 8***