

M3 Topic 1 - Solving Equations: REVIEW

1. $18 = 3(3x - 6)$

7. $-5n - 8(1 + 7n) = -8$

2. $30 = -5(6n + 6)$

8. $5(2x + 6) = -4(-5 - 2x) + 3x$

3. $-13 = 5(1 + 4m) - 2m$

4. $-\frac{4}{7}x + 2 = -18$

9. $-5(4x - 2) = -2(3 + 6x)$

5. $\frac{x}{-3} + 14 = 9$

10. $-11 - 5a = 6(5a + 4)$

6. $\frac{2}{3}(x + 5) = -24$

$$11. 8(4k - 4) = -5k - 32$$

$$14. 0.2(3x + 5) - 3 = 0.15(4x + 3)$$

$$12. 6(x - 2) = \frac{1}{3}(18x - 36)$$

$$15. \quad \frac{2}{5}x + 4 = \frac{1}{3}x - \frac{4}{15}$$

$$13. 8x - 2(x - 3) = -3(x + 7)$$

16-20. Check the steps used to solve the following equations. Circle the step that contains the error and re-do the problem to get the correct answer.

<p>16. $7x + 3(-4x - 5) = -65$ $7x - 12x - 15 = -65$ $5x - 15 = -65$ $5x = -50$ $x = -10$</p>	<p><u>re-do</u></p>
<p>17. $-35n + 10 = -8(5 + 5n)$ $-35n + 10 = -40 - 40n$ $5n + 10 = -40$ $5n = 50$ $n = 10$</p>	
<p>18. $12(x + 26) = 16(x + 20)$ $12x + 312 = 16x + 320$ $312 = 4x + 320$ $632 = 4x$ $158 = x$</p>	
<p>19. $-3(10n + 3) - 2n = 7n - 9$ $-30n - 9 - 2n = 7n + 9$ $-32n - 9 = 7n + 9$ $-39n - 9 = 9$ $-39n = 18$ $n = -18/39$</p>	
<p>20. $-11 + 10(p + 10) = 4 - 5(2p + 11)$ $-11 + 10p + 100 = 4 - 10p + 55$ $10p + 89 = 59 - 10p$ $20p + 89 = 59$ $20p = -30$ $p = -3/2$</p>	

21. Jim makes \$5 an hour at the surf shop. His boss gives him a one time bonus of \$50. Sarah makes \$8 an hour at the clothes store. Her boss gives her a one time bonus of \$14.

a. After how many hours will their paychecks be **the same**?

b. If they both work **15 hours**, who will have a bigger paycheck? (show work)

22. Billy receives \$500 for his birthday. He wants to buy a PS5. The store is selling it for \$275 and games for \$75 each. How many games can he buy along with the PS5. *Write and solve an equation.*

X = _____

Equation: _____

Solve:

23. Fill in the empty boxes to complete each equation with the given number of solutions. (you may use only numbers 0-9 as many times as needed)

A. Equation with NO SOLUTION

$$7x + 4 - 6x + 3 + x = \square x + \square$$

B. Equation with ONE SOLUTION

$$7x + 4 - 6x + 3 + x = \square x + \square$$

C. Equation with INFINITELY MANY SOLUTIONS

$$7x + 4 - 6x + 3 + x = \square x + \square$$

NAME _____ Per **A B C D E F** Date _____

Answer Key:

1) 4 **2)** -2 **3)** -1 **4)** 35 **5)** 15 **6)** -41 **7)** 0 **8)** 10

9) 2 **10)** -1 **11)** 0 **12)** Infinite Solutions **13)** -3 **14)** No Solution

15) -64 **16)** $x = 10$ **17)** $n = -10$ **18)** $x = -2$ **19)** $n = 0$

20) $p = -7$ **21) (a)** 12 hours **(b)** Sarah will make more money (\$134)

22) $500 = 275 + 75x$; 3 games

23) (a) sample answer $2x + 4$ **(b)** sample answer $5x + 3$ **(c)** $2x + 7$