

2E Getting Ready with Equations

Name: _____ Per: _____

SHOW ALL YOUR WORK. NO WORK IN PEN.

Solve for the given variable. **Explain** your steps to the right. **Simplify** and leave as exact. **CHECK BELOW.**

1. **For b:** $4(b^2 + 3) = 96$ GIVEN

✓

3. **For m:** $-1 + 6m^3 - 5n = 9 + m^3$ _____

✓

2. **For n:** $2(n + 7) = 4a$

✓

4. **For x:** $10(y + 3) = 15 + 5(x^2 - 6)$ GIVEN

✓

5. Simplify the following roots. Give exact answers. No decimals. No calculators.

a. $\sqrt{24}$

b. $\sqrt{240}$

c. $\sqrt{225}$

d. $\sqrt{40}$

e. $\sqrt{375} + \sqrt{60}$

6. Given the simplified root of $3\sqrt{2}$, **EXPLAIN** how could you put the whole number BACK UNDER THE RADICAL? (Put the 3 back under the radical.)

7. If $\sqrt{5 \cdot 5 \cdot 2} = 5\sqrt{2}$, then $\sqrt{5 + 5 \cdot 2} =$ _____ Are they the same? _____

Explain _____

8. Solve the following by first distributing over addition. List the **ENTIRE NAME** of your properties to the side. (Use only as many lines as necessary.)

$3(2x + 5) - 21 = 30 + 9x$

9. **Check your answer below** by plugging in your answer to the **ORIGINAL** equation.

10. Looking at the equation for #8: $3(2x + 5) - 21 = 30 + 9x$. Because all of the terms are divisible by _____ we can divide **EVERYTHING** by 3 first. By dividing first, you get a new equation.

a. Write this new equation and solve for x.

b. Did you get the same answer? _____ Why or why not? _____

Write an equation and **solve** to answer the question. Then **check** your answer.

11. Three less than twice a number is the same as seven and the number.

12. Two groups of five less than a number results in three times the number increased by eight.

13. Altogether Jeidan has 25 hardback and paperback books.

a. Define your variables.

b. Write an equation representing his library. _____

c. Hardbacks are \$5 and paperbacks are \$2. Write an equation for \$95 worth of books. _____

14. Emily has \$36 in \$5 bills and singles (\$1 bills). _____

a. Define your variables:

b. Write an equation to represent the money

c. If Emily has 2 five-dollar bills, how many singles does she have? SYW.

Solve for y. List the slope and y-intercepts

15. $7 + x - 2y = 10 + 3x$

17. $-x - 5y = 1 + 3(y - 9)$

Slope: _____ Y-intercept: _____

Slope: _____ Y-intercept: _____

16. $4x - 8y = 10 - 2(y + 2)$

18. $-2(x - 6) + x - 4y = 10$

Slope: _____ Y-intercept: _____

Slope: _____ Y-intercept: _____

