

Simplify the following expressions.

1. $p^2 + m$; use $m = 1$, and $p = 5$

$5^2 =$
 $5 \cdot 5 =$
25

$5^2 + 1$
 $25 + 1 = (26)$

2. $y + 9 - x$; use $x = 1$, and $y = 3$

$3 + 9 - 1$
 $12 - 1 = (11)$

3. $6(-5n + 7)$
 $6(-5n) + 6(7)$
 $-30n + 42$

What Property will you need to use?
Distributive Property

4. $(-6p + 7)(-4)$
 $(-6p)(-4) + 7(4)$
 $24p + 28$

5. Evaluate $y + 4y$ for $y = 12$

$12 + 4(12)$
 $12 + 48$
 (60)

6. $28/x - 4q$ for $x = 4$ and $q = 1$

$\frac{28}{4} - 4(1)$
 $7 - 4$
 (3)

What properties will you use?

7. Which property is used in the following expression? $7(8 + 4) = 56 + 28$

Distributive Property

8. Simplify this expression: $5(y + z)$

$5y + 5z$

9. Which Property of Multiplication is shown? $(4 + 3) \times 6 = 4 \times 6 + 3 \times 6$

Distributive Property

10. Which of the following is an example of Commutative Property of Addition?

A. $6 + 5 = (8) + 6$
NO

B. $(4 + 9) + 3 = 4 + (9 + 3)$
Associative
NO

C. $2 \times 1 = 2$
Identity
NO

D. $7 + 4 = 4 + 7$
yes

11. Which operation will not change the value of any nonzero number?

A. Adding One NO

B. Dividing by Zero NO

C. Multiplying by Zero NO

D. Multiplying by One

12. Which Property of Addition does $9 + 0 = 9$ illustrate?

Identity

13. Which equation shows the Identity Property of Multiplication?

- A. $(a + b) + 7 = a + (7 + b)$ Commutative NO
 B. $a \times 1 = a$ yes
 C. $a(b + c) = ab + ac$ Distributive NO
 D. $a + a + a = 3(a)$ NO

Change fractions to decimals.

14. $\frac{87}{100}$
 0.87

15. $\frac{7}{10}$
 0.7

16. $\frac{1}{4}$

$$\begin{array}{r} 0.25 \\ 4 \overline{) 1.00} \\ \underline{8 } \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Change decimals to fractions.

17. 0.47
 $\frac{47}{100}$

18. 0.33
 $\frac{33}{100}$

19. 0.25
 $\frac{25}{100}$

Change percent % to decimals.

20. 40%
 0.4

21. 80%
 0.8

22. 14%
 0.14

Solve these fraction problems. (You may have to find common denominators for + or -.)

23. $\frac{1}{3} + \frac{4}{7}$

$$\frac{1}{3} + \frac{4}{7} = \left(\frac{7.1}{7.3}\right) + \left(\frac{4.3}{7.3}\right)$$

$$\frac{7}{21} + \frac{12}{21} = \frac{19}{21}$$

24. $-\frac{1}{10} - \frac{3}{5}$

$$-\frac{1}{10} - \frac{3}{5} = -\frac{1}{10} - \frac{3(2)}{5(2)}$$

$$-\frac{1}{10} - \frac{6}{10} = \frac{-1-6}{10} = \frac{-1-6}{10}$$

$$\frac{-7}{10}$$

25. $\frac{1}{7} - \left(-\frac{6}{9}\right)$

$$\frac{1}{7} - \left(-\frac{6}{9}\right)$$

$$-\frac{1 \cdot 6}{7 \cdot 9} = \frac{-6}{63}$$

$$\frac{-6}{63} \div 3 = \frac{-2}{21}$$

Equations. Remember to solve for the variable. You may have to combine like terms first.

26. $x/3 + 7 = -27$

$$\begin{array}{r} x \\ 3 - 7 - 7 \\ \hline (3)x = -34 \end{array}$$

27. $5x + 45 = -40$

$$\begin{array}{r} 5x = -95 \\ 5 - 45 \\ \hline 5x = -95 \\ 5 - 45 \\ \hline x = -19 \end{array}$$

28. $107 = -69 - 11x$

$$\begin{array}{r} 107 = -69 - 11x \\ +69 +69 \\ \hline 176 = -11x \\ -11 -11 \\ \hline -16 = x \end{array}$$

$\frac{-34}{3}$
 $\frac{-102}{3}$

$$29. \begin{array}{r} 46 = -29 + 5x \\ +29 \quad +29 \\ \hline 75 = 5x \\ \frac{75}{5} = \frac{5x}{5} \\ 15 = x \end{array}$$

$$\begin{array}{r} 15 \\ 5 \sqrt{75} \\ \underline{5} \\ 25 \end{array}$$

$$30. (15x + 6x) = -63$$

$$\frac{21x}{21} = \frac{-63}{21}$$

$$\begin{array}{r} 3 \\ 21 \overline{) 63} \\ \underline{-63} \\ 0 \end{array}$$

$$x = -3$$

Signs used to represent inequalities.

< less than ○

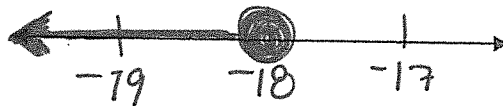
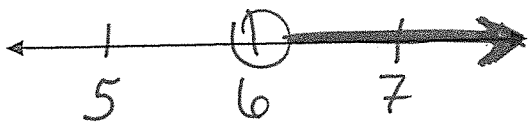
≤ less than or equal to ●

> greater than

≥ greater than or equal to

31. Graph $6 < y$ $y > 6$

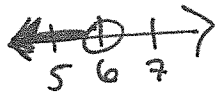
32. $-18 \geq z$ $z \leq -18$



Solve the following inequalities.

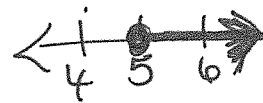
$$33. \begin{array}{r} 4 + n/3 < 6 \\ -4 \quad -4 \\ \hline (3) \frac{n}{3} < 2(3) \end{array}$$

$$n < 6$$



$$34. -3(p+1) \leq -18$$

$$\begin{array}{r} -3p + -3 \leq -18 \\ +3 \quad +3 \\ \hline -3p \leq -15 \\ \frac{-3p}{-3} \leq \frac{-15}{-3} \\ p \geq 5 \end{array}$$



Remember to Reverse sign

35. Describe how to simplify expressions. You must describe with complete sentences and use your vocabulary words we have learned during this unit. (terms, like terms, coefficients, variable, constants) First you need to combine any like terms. You will follow the operations to combine any constants and any variables that are the same.

36. Explain how to solve an inequality and check it.

Solve an inequality just like you solve an equation. You undo any addition or subtraction then you do the inverse of the multiplication a division