

End of Unit Expressions STUDY GUIDE

Write the correct answer in the blank at the right of each question.
Show all of your work!

- Name the property that is shown by each equation.
 $4x \cdot 1 = 4x$ mult. identity
 $a + (b + c) = (b + c) + a$ commutative
 $(a + b) + c = a + (b + c)$ associative
 $5m + 0 = 5m$ add. identity
 $25 \cdot 0 = 0$ zero property
 $3(m + 2) = 3(m) + 3(2) = 3m + 6$ distributive

- Use the Distributive Property to write $-5(n - 8)$ as an equivalent expression.
 $-5n - 5(-8) = -5n + 40$

2. $-5n + 40$

- Simplify the expression $6(5x - 7) - 2(2x + 4)$.
 $30x - 42 - 4x - 8$
 $30x - 4x - 42 - 8$

3. $26x - 50$

- Find the GCF of $32c$ and $80d$.

No common variables so only worry about the numbers. GCF of 32 & 80 is 16

4. 16

- Factor this expression: $36h + 60$

GCF: $12(3h + 5)$

5. $\frac{12(3h + 5)}{5}$

- Add $(-15x + 9) + (6x - 18)$.

$$\begin{array}{r} -15x + 9 \\ + (6x - 18) \\ \hline -9x - 9 \end{array}$$

6. $-9x - 9$

- Subtract $(5x - 16) - (-3x - 5)$.

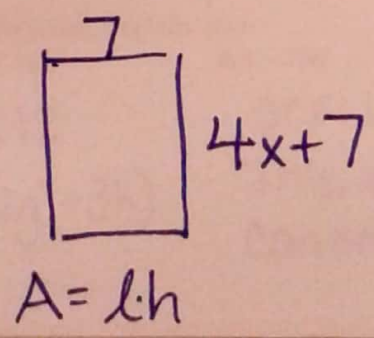
$$\begin{array}{r} 5x - 16 \\ - (-3x - 5) \\ \hline 8x - 11 \end{array}$$

$-16 + 5 = -11$
 $5x + 3x = 8x$

7. $8x - 11$

- A rectangular poster has an area of $(28x + 49)$ inches. Factor the expression $28x + 49$ to find the dimensions of the poster. Draw and label the poster.

Factor $28x + 49$
 GCF: $7(4x + 7)$



8. 7, $4x + 7$

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9. Write an algebraic expression for each verbal phrase.

a. The quotient of 5 and a number increased by 4

b. Six less than eight times a number

c. Nine times the difference of a number and two

d. The product of a number and 3 decreased by 7

quotient, difference, $\frac{5}{n} + 4$

product, sum $8n - 6$

should be done first. $9(n-2)$

sum : difference $3n - 7$

go in parenthesis $2a + 18$

10. Write the expression $5a - 3(a - 6)$ in simplest form.

$$5a - 3a + 18 = 2a + 18$$

11. Simplify the expression $7(5x - 4)$.

$$35x - 28$$

11. $35x - 28$

12. Evaluate the expression $8b - 4d$ if $b = -7$ and $d = 5$.

$$8(-7) - 4(5) = -56 - 20 = -56 + -20 = -76$$

12. -76

13. Evaluate the expression $\frac{12b}{a}$ if $b = 4$ and $a = -2$.

$$\frac{12(4)}{-2} = \frac{48}{-2} = -24$$

13. -24

14. Lynn and Jack are baking batches of cookies where each batch contains c cookies. They baked three batches Wednesday, five batches on Thursday, and then an additional 10 cookies on Friday. Write an expression to represent the total number of cookies baked.

$$3c + 5c + 10 = 8c + 10$$

Wed. Thurs. Fri cookies, not batches

14. $8c + 10$

15. Simplify $\frac{1}{4}(8a + 12c) - 6(\frac{1}{3}a - c)$

$$2a + 3c - 2a + 6c = 9c$$

15. $9c$

16. Factor each expression. If an expression cannot be factored, explain why.

$12z + 8$

$15 - 45m$

$24g^2 + 36h$

$8m - 15n$

GCF: 4

GCF: 15

GCF: 12

GCF: 1

$4(3z + 2)$

$15(1 - 3m)$

$12(2g^2 + 3h)$

This means that they cannot be factored.