

# UNIT 1 Review

Write three number sentences that fit each pattern.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
$1. n \div n = 1$	$x + y = y + x$	$2x = x + x$	$7 + a = b$
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

List three numbers that belong to each of the following sets.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
2. whole numbers	natural numbers	integers	rational numbers
_____	_____	_____	_____

Find the absolute value of each number.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
3. $ -7  =$ _____	$ 46  =$ _____	$ 68  =$ _____	$ -112  =$ _____

Write the numbers in order from least to greatest.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
4. 8, 0, -4	-7, 8, -20	0, -4, 7	-2, -9, -6

Simplify.

<i>a</i>	<i>b</i>	<i>c</i>
5. $24 \div (9 - 5) \times 4$	$12 \times 3 \div (8 + 4) - 3$	$50 + (36 \div 9 + 22)$

Write an algebraic expression for each verbal expression.

<i>a</i>	<i>b</i>
6. 9 more than $b$	$x$ decreased by 10
7. the product of 9 and $k$	$r$ divided by 2

Evaluate each expression.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
8. $(5 + 2) \times 12$	$2 \cdot 12 + 11$	$\frac{20 - 3(4)}{2}$	$\frac{16 + 47}{4 + 5}$

# UNIT 1 Review

Evaluate each expression if  $a = 6$ ,  $b = 10$ , and  $c = 3$ .

$a$	$b$	$c$	$d$
9. $a + b$	$ab$	$(c + 2)b$	$\frac{7c - 1}{2b}$

Solve.

$a$	$b$	$c$	$d$
10. $11(9) = w$	$a = \frac{1}{2}(15 + 3)$	$f = 4(4) + 3(10)$	$\frac{15 + 13}{12 - 5} = b$
Solution _____	Solution _____	Solution _____	Solution _____

11. $8k = 40$	$x + 23 = 79$	$19 + m = 100$	$4x = 10$
Solution _____	Solution _____	Solution _____	Solution _____

Solve.

12. Using the formula  $A = lw$ , find  $l$  when  $A$  is 48 square feet and  $w$  is 8 feet.

Answer \_\_\_\_\_

13. Using the formula  $C = \pi d$ , find  $C$  when  $d$  is 14 yards.

Answer \_\_\_\_\_

14. Using the formula  $V = lwh$ , find  $V$  when  $l$  is 15 meters,  $w$  is 12 meters, and  $h$  is 10 meters.

Answer \_\_\_\_\_

15. Using the formula  $V = \pi r^2 h$ , find  $V$  when  $r$  is 3 centimeters and  $h$  is 10 centimeters.

Answer \_\_\_\_\_

16. Using the formula  $I = prt$ , find  $I$  when  $p$  is \$500,  $r$  is  $4\frac{1}{2}\%$ , and  $t$  is 2 years.

Answer \_\_\_\_\_

17. Use the formula  $C = (F - 32) \cdot \frac{5}{9}$  to find  $C$  when  $F$  is  $113^\circ$ .

Answer \_\_\_\_\_

# UNIT 2 Review

Write the opposite of each integer.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. 8	-13	-1	75

Add, subtract, multiply, or divide.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
2. $-10 + (-20) =$	$13 + 8 =$	$-25 + 42 =$	$-87 + (-4) =$
3. $20 - 17 =$	$11 - 23 =$	$-5 - (-3) =$	$-9 - 2 =$
4. $8(-6) =$	$(-4)(-22) =$	$\frac{-75}{-5} =$	$\frac{-63}{9} =$

Simplify.

5. $8k + k =$	$12m - 3m =$	$7ab - 10ab =$	$10n + (-3n) =$
6. $5y + 2z - y =$	$-2b + 4c + 3b =$	$-t + 2t - 8t =$	$5jk - (-8jk) + jk =$
7. $-3(17q) =$	$-7(-26st) =$	$(-8x)(9y) =$	$(-5k)(2.4y) =$
8. $\frac{15x}{5} =$	$\frac{-25rs}{-5} =$	$\frac{54y}{-6} =$	$\frac{105mn}{-3} =$
9. $9(r - 3) =$	$w(4 + 6m) =$	$-4(16p + 8) =$	$a(-32c - 6d) =$
10. $\frac{21x}{4} \cdot \frac{2y}{3} =$	$\frac{-30rs}{-6} \cdot \frac{p}{5} =$	$\frac{4y}{-6} \cdot \frac{s}{4} =$	$\frac{10m}{-3} \cdot \frac{n}{2} =$

Simplify the following expressions.

<i>a</i>	<i>b</i>	<i>c</i>
11. $k + 7 - (2k + 5) =$	$r + 2 - 3(5 - 2r) =$	$2(3a + 5b) + 3(5a - 3b) =$
12. $\frac{a}{2} + b + \frac{a}{2} =$	$\frac{3}{4}(-12x + 20) =$	$\frac{42b + 70}{7} =$

# UNIT 2 Cumulative Review

Find the absolute value of each number.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. $ -16  =$	$ 4.6  =$	$ \frac{-3}{7}  =$	$ 15  =$

Write an algebraic expression for each verbal expression.

<i>a</i>	<i>b</i>
2. $n$ increased by 10 _____	7 divided by $w$ _____

Evaluate each expression if  $x = 9$ ,  $y = 1$ , and  $z = 5$ .

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
3. $xyz =$	$\frac{x+y}{z} =$	$3z + xy =$	$9y - x =$

Solve.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
4. $8 + 2r = 26$	$5y = \frac{33}{3} - 1$	$9x = 90$	$22 - 3b = -50$

Simplify.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
5. $(-2)(-13) =$	$(-7)(11) =$	$\frac{54}{6} =$	$\frac{-100}{5} =$
6. $2a + 7a + 5a =$	$15x - 7x + 4y =$	$4b - (-9b) =$	$-16rs + 12rs + 4rs =$
7. $3(15a) =$	$\frac{-32ab}{4} =$	$\frac{1.6t}{4} \cdot \frac{s}{2} =$	$\frac{18y}{5} \cdot \frac{15x}{3} =$
8. $4(7a + 10) =$	$\frac{2}{5}(10m - 4n) =$	$\frac{-12s - 27}{3} =$	$\frac{-4m + 20}{4} =$

Solve.

9. In the formula  $V = lwh$ , find  $V$  when  $l$  is 10 feet,  $w$  is 6 feet, and  $h$  is 2 feet.

10. In the formula  $D = rt$ , find  $t$  when  $D$  is 240 miles and  $r$  is 80 miles per hour.

Answer \_\_\_\_\_

Answer \_\_\_\_\_



# UNIT 3 Review

Solve. Check.

<i>a</i>	<i>b</i>	<i>c</i>
1. $a + (-25) = 75$	$x - 37 = 94$	$r + (-12) = 3$
2. $5x = 45$	$-15y = 105$	$25x = 10$
3. $\frac{2a}{3} = 4$	$\frac{x}{2} = 6$	$5x - 2x = 9$
4. $5x + 6x = 1$	$4r - 3 = 3$	$5x + 7 = 2x + 8$
5. $3m + 1 = 6m - 5$	$\frac{3x}{4} = 7 + \frac{x}{6}$	$\frac{5x}{2} - 10 = \frac{x}{4} - 1$
6. $\frac{3x}{10} = \frac{9}{5}$	$5y - 2(y + 2) = 5$	$6y - 4 = 2(2y + 1)$

Solve.

7. Together, Leslie and Lakita have \$15.25. Lakita has \$0.25 more than Leslie. How much does each have?

8. Marcos is 7 years older than his sister, Rosa. The sum of their ages is 1 less than 3 times Rosa's age. How old is each?

Answer \_\_\_\_\_

Answer \_\_\_\_\_

# UNIT 3 Cumulative Review

**Simplify.**

<i>a</i>	<i>b</i>	<i>c</i>
1. $(-2)(-7) =$	$5(-8 + 9) =$	$\frac{4 + 6(2)}{4} =$
2. $-3a + 4(a + 2) =$	$7(-3a) + 6(-a) =$	$3(a + 3b) - (a + 2b) =$

**Solve. Check.**

<i>a</i>	<i>b</i>	<i>c</i>
3. $r + 17 = 20$	$\frac{a}{5} + 7 = -2$	$x - 10 = 35$
4. $5x = 90$	$\frac{y}{9} = -8$	$\frac{2a}{5} = 4$
5. $8x + 5 = 5x - 10$	$8a - 6a + 3 = 7$	$\frac{3x}{2} + 2 = \frac{x}{4} + 7$
6. $\frac{2a}{7} = \frac{2}{3}$	$\frac{x}{8} = \frac{15}{24}$	$3(x + 2) = 2(x + 5)$

**Solve.**

7. In the formula  $V = lwh$ , find  $l$  when  $h = 4$  in.,  $w = 7$  in., and  $V = 252$  cu in.

Answer \_\_\_\_\_

8. In the formula  $I = prt$ , find  $p$  when  $I = \$20$ ,  $r = 5\%$ , and  $t = 1$  year.

Answer \_\_\_\_\_

9. Twice a number decreased by 8 is equal to the number increased by 10. Find the number.

Answer \_\_\_\_\_

10. The sum of two consecutive numbers is 95. What are the numbers?

Answer \_\_\_\_\_

# UNIT 4 Review

**Simplify.**

<i>a</i>	<i>b</i>	<i>c</i>
1. $5^2 =$	$(-9)^3 =$	$(-10)^2 \cdot 3^2 =$

**Change each number from scientific notation to standard form.**

<i>a</i>	<i>b</i>	<i>c</i>
2. $1.8 \times 10^{-4} =$	$2.7 \times 10^6 =$	$3.45 \times 10^{-3} =$

**Simplify.**

<i>a</i>	<i>b</i>	<i>c</i>
3. $(cd^3)(c^2) =$	$(-5xy^3)(5x^5y) =$	$(xy^3z^4)^3 =$

4. $\frac{m^9}{m^3} =$	$\frac{-8a^3b^2c}{12ab^2c^3} =$	$(xy - x) + (5xy + 3x) =$
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5. $(-b - 4) - (b + 2) =$	$-(15m^2 + 6m^3) - (-5m) =$	$\frac{4ab}{6a} \cdot \frac{3b}{2ab} =$
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6. $\frac{3x^2y}{z} \cdot \frac{z^2}{3} =$	$\frac{-12x^3}{5} \div 4x =$	$\frac{x^2 - x}{x} =$
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7. $\frac{10xy + 4z}{2} =$	$\frac{16a^4 - 12a^2 - 4a}{4a} =$	$x(x - y) =$
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8. $-2y(-2x^2 + y + 3) =$	$(3a + 4b)(a - 6b) =$	$(a^2 + b^2 + 3)(ab - b) =$
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**Divide.**

<i>a</i>	<i>b</i>	<i>c</i>
9. $x + 1 \overline{)x^2 - x - 2}$	$x + 2y \overline{)x^2 + 4xy + 4y^2}$	$2x - 3y \overline{)4x^2 - 12xy + 9y^2}$

**Find the common monomial factor. Divide to find another factor. Then write the polynomial as the product of the monomial and a polynomial.**

<i>a</i>	<i>b</i>
10. $12az - 8bz + 16cz =$	$9fy + 15gy - 27y =$

# UNIT 4 Cumulative Review

Solve.

<i>a</i>	<i>b</i>	<i>c</i>
1. $y - 35 = -100$	$7 + 37 = 2k$	$-11 - 3r = -2$
2. $5(a + 3) = 25$	$7b - 10b = -18$	$3(n - 2) = -n - 10$
3. $5x = 135$	$\frac{x}{4} = \frac{3}{8}$	$\frac{2s}{3} = 16$

Simplify.

<i>a</i>	<i>b</i>	<i>c</i>
4. $2(4 + 3) - 6(0) =$	$-16 - (-34) =$	$-6(-4)(-8) =$
5. $\frac{-135}{-3} =$	$ -15  =$	$(-1)^{99}(-2)^4 =$
6. $(4a^2x)^2 =$	$3a(2b^3 + c^2) =$	$\frac{-125rs^5}{-25s^3} =$
7. $\frac{a}{4} + \frac{3a}{4} - \frac{1}{2} =$	$\frac{-15a^4b^{10}c^6}{-3ab^2c^3} =$	$\frac{3a}{4} \div \frac{9a^4}{16} =$
8. $\frac{4ab^2}{3} \div \frac{12a^2b^2}{a} =$	$\frac{10x^3}{(a + b)} \cdot \frac{6(a + b)}{20x^2} =$	$(4a + 2b)(3a - b + b^2) =$
9. $\frac{-9a^3}{x^4} \cdot \frac{3x^4}{a} =$	$\frac{-24x^2y - 20y^4z^6 + 10y}{-2y} =$	$5x - 6\sqrt{5x^2 + 9x - 18} =$

Solve.

10. The sum of three consecutive numbers is 279. Find the numbers.

11. Find the circumference of a circle if the diameter is 24 feet. ( $C = \pi d$ )

Answer \_\_\_\_\_

Answer \_\_\_\_\_