

MAT 0012 Basic Algebra I

KEY CONCEPT REVIEW

CHAPTER 2: SECTIONS 2.4 – 2.5

TO RECEIVE CREDIT, DO ALL PROBLEMS, MAKE CORRECTIONS, AND SHOW ALL WORK.

- 1) If you multiply two numbers with the same signs, what is the sign of the product?

Multiply.

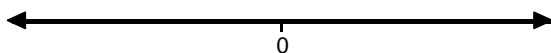
- 2) $-5(-18)$
 3) $11(-17)$
 4) What is the sign of the product of five negative numbers?

Find each product.

- 5) $(-4)(-8)(3)$
 6) $-2(-4)(-11)(8)$
 A) 704 B) -704
 C) -176 D) 176
 7) $(-7)(-20)(-1) \cdot 0 \cdot 6$
 A) 840 B) -840
 C) -140 D) 0

- 8) **Graph each number on the number line.**

- a) -3^2 b) $(-3)^2$



Do these numbers occupy the same position? Explain.

- 9) **Evaluate each expression.**

- a) $-(-2)^5$ b) $-(-4)^2$

- 10) If you divide two numbers with opposite signs, what is the sign of the quotient?

Divide.

- 11) $-144 \div (-6)$
 12) $108 \div (-18)$
 13) $\frac{-80}{-16}$

- 14) Which expressions have a quotient of -3 ?

- (i) $\frac{27}{-9}$ (ii) $\frac{-27}{9}$ (iii) $-\frac{27}{9}$

- A) (i) and (ii)
 B) (i) only
 C) (ii) only
 D) none of these
 E) all of these

Perform the indicated operations.

- 15) $-4 - 5 + (-3) - 12$
 16) $-12 - (-3) - (-5)$
 17) $-3(-4) - 12(-5)$
 A) 20 B) 72
 C) 72 D) -48
 18) $-3 - 12 - 5$
 19) $-12 - (-3)(-4)$
 A) 60 B) 0
 C) -24 D) 36

- 20) To simplify the expression below, which operation should be done first?

$$72 - 24 \div 6 \cdot 2 + 18$$

- A) Addition
 B) Subtraction
 C) Multiplication
 D) Division

- 21) Which expression evaluates to -52 ?

- A) $-4^2 - 6^2$
 B) $4^2 - 6^2$
 C) $(-4)^2 - (-6)^2$
 D) $(-4)^2 + (-6)^2$

Simplify each expression.

22) $-25 + (5 \cdot 3 - 20) \div 5$

- A) -24 B) -6
 C) -26 D) 26

23) $[6 + (-10)]^3$

24) $2(3 - 9)^2 \div (5 - 3)^2$

25) $-5^2 - (-2)^3 + (-1)^5$

Simplify each expression.

26) $|10 - 18| \cdot -20 \div -4$

- A) -40 B) -140
 C) 140 D) 40

27) $\frac{20 \div -4 + -1^3}{[1 - (-1)]}$

- A) -3 B) 3
 C) 4 D) undefined

Evaluate each expression for $x = -2$, $y = 3$, and $z = -4$.

28) $7x - y^2$

29) $-9x + 8y - 6z$

- A) -19 B) -32
 C) 66 D) 72

- 30) A golfer scored 6 below par one day and 2 above par the next day. What was the difference between the two scores?