MAT 121 Practice Test - Colorado Mountain College   Score: _____

1. **Evaluate the expression for x = -1.**

-| -x | + | x |

- (A) -2
- (B) -1
- (C) 1
- (D) 0
- (E) none of these

2. $7^9/7^7$

- (A) 49
- (B) $7^7/7^9$
- (C) 7^{-2}
- (D) 1
- (E) none of these

3. **Evaluate.**

$3^{-1} + 3^{-2}$

- (A) 1/12
- (B) 4/9
- (C) 12
- (D) 9
- (E) none of these

4. **Simplify. Write your answers with no negative exponents.**

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

- (A) $3a^4b^6$
- (B) $3a^4/b^6$
- (C) $a^4/9b^6$
- (D) $9a^4b^9$
- (E) none of these

5. Simplify.

$$\frac{4x^2y^{-3}z}{2x^{-1}y^{-2}z}$$

- (A) $4xy/z$
- (B) $2x^3y^5/z$
- (C) $2xy/z$
- (D) $2x^3/y$
- (E) none of these

6. Evaluate.

$$27^{2/3}$$

- (A) 9
- (B) 18
- (C) 1/9
- (D) -1/9
- (E) none of these

7. Evaluate.

$$100^{-3/2}$$

- (A) -150
- (B) -1/100
- (C) 1/1000
- (D) 100
- (E) none of these

8. Simplify.

$$2\sqrt{27} - \sqrt{75}$$

- (A) $-30\sqrt{3}$
- (B) 1
- (C) $\sqrt{2}$
- (D) $\sqrt{3}$
- (E) none of these

9. Subtract and simplify

(3x + 2) - (2x + 5)

A) $x + 7$

B) 7

C) $x - 3$

D) $5x$

E) none of these

10. Factor the difference of squares.

$49x^2 - 9$

A) $40x^2$

B) $(7x + 3)(7x - 3)$

C) $9(4x^2 - 1)$

D) $(7x - 3)^2$

E) none of these

11. Given the following formula, $u^3 - v^3 = (u - v)(u^2 + uv + v^2)$

factor the expression:

$8x^3 - 27$

A) $(2x - 3)(4x^2 + 6x + 9)$

B) $(8x - 3)(8x^2 + 24x + 9)$

C) $(2x + 3)((4x^2 - 6x + 9)$

D) $(8x - 3)(8x^2 - 24x + 9)$

E) none of these

12. Factor completely.

$3(4x - 5) + (4x - 5)^2$

A) $(4x - 5)(4)$

B) $12x - 15 + (4x - 5)^2$

C) $2(4x - 5)(2x - 1)$

D) $3(4x - 5)^3$

E) none of these

13. Given that f(x) = 3x - 5, Evaluate f(2)

- (A) 6x - 10
- (B) 2
- (C) -4x
- (D) 1
- (E) none of these

14. Find the x-intercept of the function f(x) = -2x + 6

- (A) 3
- (B) -3
- (C) 2
- (D) -2
- (E) none of these

15. Solve $4x^2 - 20x = 0$

- (A) -8, 0
- (B) 4, -20
- (C) 0, 5
- (D) 2, -2
- (E) none of these

16. Solve. $x^2 - 9x - 36 = 0$

- (A) 3, -12
- (B) -4, 9
- (C) -3, 12
- (D) 4, -9
- (E) none of these

17. What math class will you be taking in the fall of 2019?

- (A) MAT 108 - Algebra Review
- (B) MAT 122 - Pre-College Algebra
- (C) MAT 151 - College Algebra
- (D) MAT 172 - Trig/Pre-Calc
- (E) None of these - I will not be taking a math class in the fall

18. The most valuable/memorable thing I've learned in this math class this year is....

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