

**Math 2A Final Review Part 1**

Name \_\_\_\_\_

Hour \_\_\_\_\_

\_\_\_\_ 1. Write  $(4x)^{\frac{2}{3}}$  in radical form.

a.  $4\sqrt[3]{x^2}$

b.  $(\sqrt{4x})^3$

c.  $(\sqrt[3]{4x})^2$

d.  $\sqrt{4x}$

\_\_\_\_ 2. Write  $(\sqrt{3x})^3$  in exponential form.

a.  $(3x)^{\frac{3}{2}}$

b.  $(3x)^{\frac{2}{3}}$

c.  $\frac{1}{(3x)^{\frac{3}{2}}}$

d.  $3x^{\frac{3}{2}}$

\_\_\_\_ 3. Simplify  $3m^{\frac{3}{2}} \cdot 3m^{\frac{2}{3}}$ 

a.  $3m$

b.  $6m^{\frac{3}{2}}$

c.  $9m^{\frac{13}{6}}$

d.  $3m^{\frac{13}{6}}$

\_\_\_\_ 4. Simplify  $3x^0 x^{\frac{1}{3}}$ 

a. 3

b.  $3x$

c. 1

d.  $3x^{\frac{1}{3}}$

\_\_\_\_ 5. Simplify  $(64m^6)^{\frac{3}{2}}$ 

a.  $64m^9$

b.  $512m^9$

c.  $8m^2$

d.  $512m^{\frac{15}{2}}$

\_\_\_\_ 6. Simplify  $\frac{4xy^{-2}}{2xy^{\frac{5}{3}}}$ 

a.  $2x^2 y^{\frac{1}{3}}$

b.  $\frac{2}{y^{\frac{1}{3}}}$

c.  $\frac{2}{y^{\frac{11}{3}}}$

d.  $\frac{2x^2}{y^{\frac{11}{3}}}$

\_\_\_\_ 7. Simplify  $\frac{4k^{-\frac{2}{3}}}{k^{\frac{1}{2}}}$ 

a.  $\frac{4}{k^{\frac{7}{6}}}$

b.  $4k^{\frac{7}{6}}$

c.  $\frac{4}{k^{\frac{7}{6}}}$

d.  $\frac{1}{4k^{\frac{7}{6}}}$

**Math 2A Final Review Part 1**

Name \_\_\_\_\_

Hour \_\_\_\_\_

\_\_\_\_ 8. Simplify  $\left(\frac{x^{\frac{7}{4}}y^{\frac{3}{2}}}{y^2}\right)^{\frac{1}{3}}$

a.  $\frac{x^{\frac{7}{12}}}{y^{\frac{1}{6}}}$

b.  $\frac{y^{\frac{11}{12}}}{x^{\frac{7}{8}}}$

c.  $x^2y^3$

d.  $y^{\frac{3}{2}}x^{\frac{11}{3}}$

\_\_\_\_ 9. Simplify  $(xy^{\frac{5}{3}})^{\frac{2}{3}}$

a.  $y^4x^{\frac{10}{3}}$

b.  $x^3y^{\frac{3}{2}}$

c.  $x^{\frac{2}{3}}y^{\frac{10}{9}}$

d.  $y^4$

\_\_\_\_ 10. Simplify  $(3v + 6)(6v^2 - 7v - 8)$

a.  $18v^3 + 15v^2 - 66v - 48$   
 c.  $18v^3 - 21v^2 - 30v - 48$

b.  $20v^3 + 56v^2 + 44v + 24$   
 d.  $6v^2 - 4v - 2$

\_\_\_\_ 11. Simplify  $(4x - 6)(4x + 6)$

a.  $16x^2 + 48x + 36$

b.  $16x^2 - 48x + 36$

c.  $x^2 - 16x + 64$

d.  $16x^2 - 36$

\_\_\_\_ 12. Simplify  $(5n + 1)^2$

a.  $25n^2 - 1$

b.  $25n^2 + 1$

c.  $10n + 2$

d.  $25n^2 + 10n + 1$

\_\_\_\_ 13. Simplify  $(2x - 3)(3x + 1)$

a.  $6x^2 - 7x - 3$

b.  $6x^2 + 11x + 3$

c.  $6x^2 + 5x - 25$

d.  $3x^2 - 8x + 5$

**Math 2A Final Review Part 1**

Name \_\_\_\_\_

Hour \_\_\_\_\_

\_\_\_\_14. Factor  $k^2 - 7k - 30$  completely.

- a.
- $(k + 10)(k + 3)$
- b.
- $(k - 10)(k + 3)$
- c.
- $(k + 10)(k - 3)$
- d.
- $(k + 30)(k - 1)$

\_\_\_\_15. Factor  $4a^2 + 16a - 240$  completely.

- a.
- $4(a + 20)(a - 3)$
- b.
- $4(a - 6)(a + 10)$
- c.
- $4(a - 6)(a - 10)$
- d.
- $4(a + 6)(a - 10)$

\_\_\_\_16. Factor  $6n^3 + 21n^2 - 10n - 35$  completely.

- a.
- $(3n^2 - 5)(3n^2 - 7)$
- b.
- $(3n^2 - 5)(2n + 7)$
- c.
- $(3n^2 + 5)(2n - 7)$
- d.
- $(2n - 5)(3n^2 + 7)$

\_\_\_\_17. Factor  $m^2 - 25$  completely.

- a.
- Not factorable*
- b.
- $(m - 5)(m - 5)$
- c.
- $(m + 5)(m - 5)$
- d.
- $(m + 25)^2$

\_\_\_\_18. Factor  $5n^2 - 21n + 4$  completely.

- a.
- $(5n + 4)(n + 1)$
- b.
- $5(n - 4)(n + 4)$
- c.
- $(5n - 1)(n - 4)$
- d.
- $(5n + 2)(n + 2)$

\_\_\_\_19. Factor  $2a^3 - 23a^2 + 56a$  completely.

- a.
- $2a(a + 28)(a + 1)$
- b.
- $a(2a - 7)(a - 8)$
- c.
- $2a(a - 7)(a + 8)$
- d.
- Not factorable*

\_\_\_\_20. Find the x intercepts of  $x^2 - 2x - 15 = 0$ .

- a.
- $(-3, 0), (5, 0)$
- b.
- $(3, 0), (-5, 0)$
- c.
- $(7, 0), (5, 0)$
- d.
- $(-2, 0)$

\_\_\_\_ 21. Solve  $4n^2 + 20n = 0$

- a.  $n = 5, n = 0$       b.  $n = -5, n = 0$       c.  $n = 7, n = 0$       d.  $n = 5$

\_\_\_\_ 22. Find the vertex of  $f(x) = x^2 - 4x + 3$

- a.  $(2, -1)$       b.  $(-2, -15)$       c.  $(-2, 7)$       d.  $(0, 1)$

\_\_\_\_ 23. Find the vertex of  $f(x) = -x^2 + 2x - 4$

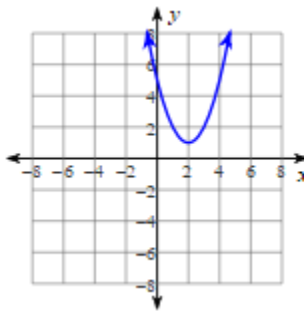
- a.  $(1, -3)$       b.  $(1, -1)$       c.  $(-1, -7)$       d.  $(0, -4)$

\_\_\_\_ 24. Identify the vertex, axis of symmetry, and min/max value of  $y = (x+1)^2 + 2$ . Then match it to the correct graph.

a. Vertex:  $(2, 1)$

Axis of Symm:  $x = 2$

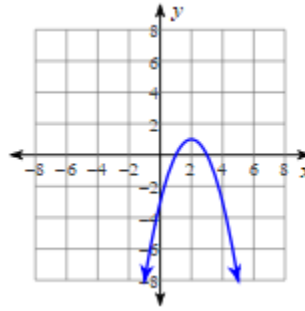
Min value = 1



b. Vertex:  $(2, 1)$

Axis of Symm:  $x = 2$

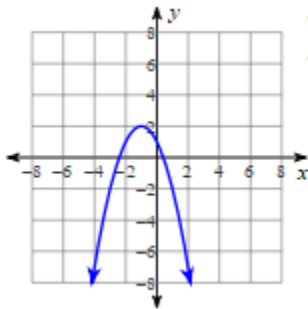
Max value = 1



c. Vertex:  $(-1, 2)$

Axis of Symm:  $x = -1$

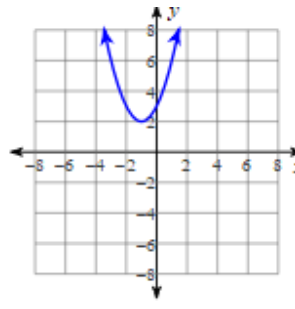
Max value = 2



d. Vertex:  $(-1, 2)$

Axis of Symm:  $x = -1$

Min value = 2



\_\_\_\_ 25. Given the following criteria, identify the correct equation. An absolute value function that has been shifted right 3, and has been shifted up 2, reflected over the x-axis, and has a vertical stretch of 4.

- a.  $f(x) = -|x + 3| + 2$       b.  $f(x) = -4|x + 3| + 2$   
 c.  $f(x) = 4|x - 3| + 2$       d.  $f(x) = -4|x - 3| + 2$