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

     a. $4\sqrt[3]{x^2}$ b. $\left(\sqrt{4x}\right)^3$ c. $2 \cdot \left(\sqrt[3]{4x}\right)^2$ d. $\sqrt{4x}$

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

     a. $(3x)^{\frac{3}{2}}$ b. $(3x)^{\frac{2}{3}}$ c. $\dfrac{1}{(3x)^{\frac{3}{2}}}$ d. $3x^{\frac{3}{2}}$

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

     a. $3m$ b. $6m^{\frac{3}{2}}$ c. $9m^{\frac{13}{6}}$ d. $3m^{\frac{13}{6}}$

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

     a. 3 b. $3x$ c. 1 d. $3x^{\frac{1}{3}}$

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

     a. $64m^9$ b. $512m^9$ c. $8m^2$ d. $512m^{\frac{15}{2}}$

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

     a. $2x^2 y^{\frac{1}{3}}$ b. $\dfrac{2}{y^{\frac{1}{3}}}$ c. $\dfrac{2}{y^{\frac{11}{3}}}$ d. $\dfrac{2x^2}{y^{\frac{11}{3}}}$

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

     a. $\dfrac{4}{k^{\frac{1}{6}}}$ b. $4k^{\frac{7}{6}}$ c. $\dfrac{4}{k^{\frac{7}{6}}}$ d. $\dfrac{1}{4k^{\frac{7}{6}}}$

A ___8. Simplify $\left(\dfrac{x^{\frac{7}{4}}y^{\frac{3}{2}}}{y^2}\right)^{\frac{1}{3}}$

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

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

c. x^2y^3

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

C ___9. Simplify $\left(xy^{\frac{5}{3}}\right)^{\frac{2}{3}}$

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

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

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

c. $y^4x^{\frac{10}{3}}$ ⊙

d. y^4

A ___10. Simplify $(3v+6)(6v^2-7v-8)$

a. $18v^3+15v^2-66v-48$ ⊙

b. $20v^3+56v^2+44v+24$

c. $18v^3-21v^2-30v-48$

d. $6v^2-4v-2$

D ___11. Simplify $(4x-6)(4x+6)$

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

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

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

d. $16x^2-36$ ⊙

D ___12. Simplify $(5n+1)^2$

a. $25n^2-1$

b. $25n^2+1$

c. $10n+2$

d. $25n^2+10n+1$ ⊙

A ___13. Simplify $(2x-3)(3x+1)$

a. $6x^2-7x-3$ ⊙

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

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

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

B ____14. Factor $k^2 - 7k - 30$ completely.

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

B ____15. Factor $4a^2 + 16a - 240$ completely.

                                 $4(a^2 + 4a - 60)$

                                 $4(a - 6)(a + 10)$

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

B ____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. $(2n - 5)(3n^2 + 7)$

C ____17. Factor $m^2 - 25$ completely.

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

C ____18. Factor $5n^2 - 21n + 4$ completely.

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

B ____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*

A ____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. $(-2, 0)$

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

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

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

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

_A__ 23. Find the vertex of $f(x) = -x^2 + 2x - 4$
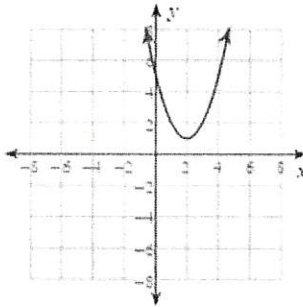
   a. $(1, -3)$ b. $(1, -1)$ c. $(-1, -7)$ d. $(0, -4)$

_D__ 24. Identify the vertex, axis of symmetry, and min/max value of $y = (x+1)^2 + 2$. Then match it to the correct graph.
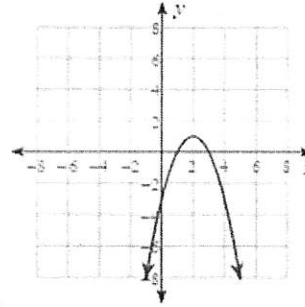
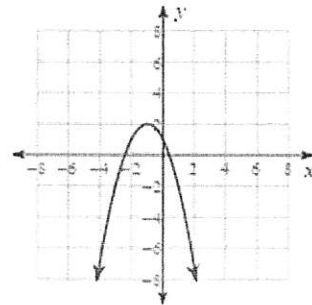   a. Vertex: $(2, 1)$ b. Vertex: $(2, 1)$
      Axis of Symm: $x = 2$ Axis of Symm: $x = 2$
      Min value $= 1$ Max value $= 1$

   c. Vertex: $(-1, 2)$ d. Vertex: $(-1, 2)$
      Axis of Symm: $x = -1$ Axis of Symm: $x = -1$
      Max value $= 2$ Min value $= 2$
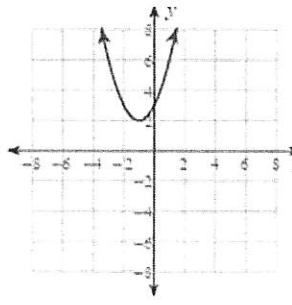
_D__ 25. Given the following criteria, identify the correct equation. An absolute value function that has been has been shifted right 3, and has been shifted up 2, reflected over the x-axis, and has a vertical stretch of 4.

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