Classwork 4
Intermediate Algebra MTH 35
Topic: Exponents

Name: _____

Using the notation $\sqrt[n]{x^m} = x^{m/n}$, simplify the following expressions. Write your answers with positive exponents.

1. $\dfrac{1}{\sqrt[5]{x^{-2}}}$

   ANSWER _____

2. $\left(\sqrt{xy}\right)^{-3}$

   ANSWER _____

3. $\sqrt{x}\, x^3 x^4$

   ANSWER _____

4. $\sqrt{xy}\, x^3 y^3$

   ANSWER _____

5. $yz\sqrt{y^3}\left(\sqrt{z}\right)^4$

   ANSWER _____

6. $\dfrac{\sqrt{x^3}}{\sqrt[3]{x^2}}$

   ANSWER _____

7. $\dfrac{\sqrt[4]{x^5}}{x^2\left(\sqrt{x}\right)^7}$

   ANSWER _____

8. $\dfrac{\sqrt[3]{x^2}\, y^3}{\sqrt{y^2}\, x^5}$

   ANSWER _____

9. $x^{-2}\sqrt[3]{x^4}\sqrt{x^3}$ **ANSWER** _____

10. $\dfrac{\sqrt{x^{-1}x^5}}{\sqrt{x^2x^{-3}}}$ **ANSWER** _____

11. $\dfrac{\sqrt[3]{x^2}\sqrt[5]{z^2}}{y^2x^4}\dfrac{\sqrt{y^3}x}{\sqrt[3]{z^4}x^2y}$ **ANSWER** _____

12. $\sqrt[3]{(x^2)^2}x^3$ **ANSWER** _____

13. $(y^3)^3(\sqrt{y^2})^3$ **ANSWER** _____

14. $\sqrt{(xy)^2}\sqrt{x^3y^2}$ **ANSWER** _____

15. $\dfrac{\sqrt[3]{(xyz)^4}}{xyz}$ **ANSWER** _____

16. $\dfrac{\sqrt{x^{-1}y^2}}{\sqrt[3]{y^{-2}x^3}}$ **ANSWER** _____

Name: _____

Simplify the following expressions

1. $(3x + 4) + (7x + 2)$ **ANSWER** _____

2. $2(t - 1) + 3(t - 3)$ **ANSWER** _____

3. $4(u^2 + 1) - 3(u^2 + 2u + 1)$ **ANSWER** _____

4. $5(z^2 - 3z + 2) + 3(z^2 - z + 7)$ **ANSWER** _____

5. $3(y - 2) - 4(y - 7)$ **ANSWER** _____

6. $t + (t^2 - 4) - t(t + 3)$ **ANSWER** _____

7. $x(x + 3)$ **ANSWER** _____

8. $y(y - 2) + 2y(3 - y)$ **ANSWER** _____

9. $3u(u^3 - 2u^2 + 4u - 2)$ **ANSWER** _____

10. $t(t^2 - 4) - t(t + 3)$ **ANSWER** _____

Expand and simplify the following expressions

11. $(x+1)(x-2)$ **ANSWER** _____

12. $(x-1)(x+1) + x^2(x-3)$ **ANSWER** _____

13. $y^2(y^2 + 3y + 2) - (y^4 + y)$ **ANSWER** _____

14. $(2u+3)(3u-1)$ **ANSWER** _____

15. $(t-4)(2t-1)$ **ANSWER** _____

Simply the following rational expressions

16. $2 - \dfrac{x}{x+3}$ **ANSWER** _____

17. $\dfrac{1}{x+5} - \dfrac{x}{x+3}$ **ANSWER** _____

18. $u + 1 + \dfrac{u}{u+1}$ **ANSWER** _____

19. $\dfrac{1}{x} - \dfrac{2}{x^2}$ **ANSWER** _____

20. $\dfrac{3}{t-3} + \dfrac{5}{t+2}$ **ANSWER** _____