

Unit 6 Day 2

Warm-Up:

1. Simplify $x^2 y^{-4} \cdot x^3 y^2$

$$x^5 y^{-2} = \frac{x^5}{y^2}$$

2. Solve for x: $-6 = \frac{x}{8} + 4$

$$\begin{array}{r} -4 \quad -4 \\ \hline 8 \left(-10 = \frac{x}{8} \right) \end{array}$$

$$\boxed{x = -80}$$

3. If y varies directly with x and $y = 4.8$ when $x = 2.4$, what is y when $x = 2.05$?

$$\frac{y}{x} = \frac{4.8}{2.4} = \frac{y}{2.05}$$

$$\frac{9.84}{2.4} = \frac{2.4y}{2.4}$$

$$\boxed{y = 4.10}$$

Day 2 Homework Worksheet

Simplify the following. Show all work, as necessary

1. $n^2 \cdot n^5$

$$\boxed{n^7}$$

2. $2^2 \cdot 2^3$

$$2^5 = \boxed{32}$$

3. $(-2)^2(-2)^5$

$$(-2)^7 = \boxed{-128}$$

4. $z^{10} \cdot z^3$

$$\boxed{z^{13}}$$

5. $\frac{r^4}{r^3}$

$$\boxed{r}$$

6. $\frac{m^5}{m^2}$

$$\boxed{m^3}$$

7. $\frac{15^4}{15}$

$$15^3 = \boxed{3375}$$

8. $\frac{x^7}{x^{15}}$

$$\boxed{\frac{1}{x^8}}$$

9. $(2^4)^3$

$$2^{12} = \boxed{4096}$$

10. $(x^6)^5$

$$\boxed{x^{30}}$$

11. $(3z^2)^2$

$$\boxed{9z^4}$$

12. $(-5x)^2$

$$\boxed{25x^2}$$

13. $(-0.3)^0$

$$\boxed{1}$$

14. $(-7y)^0$

$$\boxed{1}$$

15. $-7y^0$

$$\boxed{-7}$$

16. $\left(\frac{x^2}{t}\right)^3$

$$\boxed{\frac{x^6}{t^3}}$$

17. $\left(\frac{5m}{3z^3}\right)^2$

$$\boxed{\frac{25m^2}{9z^6}}$$

18. $\left(\frac{3c}{2y^2}\right)^4$

$$\boxed{\frac{81c^4}{16y^8}}$$

19. w^{-6}

$$\boxed{\frac{1}{w^6}}$$

20. $\frac{1}{2^{-3}}$

$$2^3 = \boxed{8}$$

21. $(2m)^{-3}$

$$\frac{1}{(2m)^3} = \boxed{\frac{1}{8m^3}}$$

22. $(3a)^{-3}$

$$\frac{1}{(3a)^3} = \boxed{\frac{1}{27a^3}}$$

23. $\frac{a^{-2}b^4}{3a^{-3}}$

$$\frac{a^3b^4}{3a^2}$$

$$\boxed{\frac{ab^4}{3}}$$

24. $\frac{28x^{-2}}{7y^{-3}}$

$$\boxed{\frac{4y^3}{x^2}}$$