



Math II

Name \_\_\_\_\_ ID: 1

Exponential Properties Practice A

Date \_\_\_\_\_ Period \_\_\_\_\_

Simplify. Your answer should contain only POSITIVE EXPONENTS

$$1) \underline{2n^{-3}} \cdot \underline{2n^1} \\ 2 \cdot 2 \cdot n^{-3+1} \rightarrow 4n^{-2} \rightarrow \boxed{\frac{4}{n^2}}$$

$$2) \underline{2x^1} \cdot \underline{x^3} \rightarrow 2x^{1+3} \rightarrow \boxed{2x^4}$$

$$3) \underline{v^2} \cdot \underline{v^3} \rightarrow v^{2+3} \rightarrow \boxed{v^5}$$

$$4) \underline{x^{-1}} \cdot \underline{2x^1} \rightarrow 2x^{-1+1} \rightarrow 2x^0 \rightarrow \boxed{2}$$

$$5) \underline{3x^1} \cdot \underline{3x^1} \rightarrow 3 \cdot 3 x^{1+1} \rightarrow \boxed{9x^2}$$

$$6) \underline{2x^3} \cdot \underline{x^1} \rightarrow 2x^{3+1} \rightarrow \boxed{2x^4}$$

$$7) \underline{v^{-1}} \cdot \underline{2v^3} \rightarrow 2v^{-1+3} \rightarrow \boxed{2v^2}$$

$$8) \underline{3a^2} \cdot \underline{3a^3} \rightarrow 3 \cdot 3 a^{2+3} \rightarrow \boxed{9a^5}$$

$$9) \underline{3a^3} \cdot \underline{3a^0} \rightarrow 3 \cdot 3 a^{3+0} \rightarrow \boxed{9a^3}$$

$$10) \underline{3b^3} \cdot \underline{2b^3} \rightarrow 3 \cdot 2 b^{3+3} \rightarrow \boxed{6b^6}$$

$$11) k^{-2} \rightarrow \frac{1}{k^2}$$

$$13) (n^2)^3 \rightarrow n^{2 \cdot 3} \rightarrow n^6$$

$$15) (3v^2)^3 \rightarrow 3^3 v^{2 \cdot 3} \rightarrow 27v^6$$

$$12) (3x^2)^{-3} \rightarrow 3^{-3} x^{(2)(-3)} \rightarrow 3^{-3} x^{-6} \rightarrow \frac{1}{3^3 x^6} \rightarrow \frac{1}{27x^6}$$

$$14) (2b^{-1})^2 \rightarrow 2^2 b^{-1 \cdot 2} \rightarrow 2^2 b^{-2} \rightarrow \frac{2^2}{b^2} \rightarrow \frac{4}{b^2}$$

$$16) (2b^{-1})^3 \rightarrow 2^3 b^{-1 \cdot 3} \rightarrow 2^3 b^{-3} \rightarrow \frac{2^3}{b^3} \rightarrow \frac{8}{b^3}$$

-1-

17)  $(n^0)^{-3} \rightarrow n^{(0) \cdot (-3)} \rightarrow n^0 \rightarrow \boxed{1}$

18)  $(b^{-1})^2 \rightarrow b^{-1 \cdot 2} \rightarrow \boxed{b^{-2}} \rightarrow \frac{1}{b^2}$

19)  $(2x^2)^3 \rightarrow 2^3 x^{2 \cdot 3} \rightarrow 2^3 x^6 \rightarrow \boxed{8x^6}$

20)  $(2x)^{-2} \rightarrow \boxed{2^{-2} x^{-2}} \rightarrow \frac{1}{2^2 x^2} \rightarrow \boxed{\frac{1}{4x^2}}$

21)  $\frac{2n^3}{n^2} \rightarrow 2n^{3-2} \rightarrow \boxed{2n^1}$

22)  $\frac{2x^3}{x^{-2}} \rightarrow 2x^{3-(-2)} \rightarrow \boxed{2x^5}$

23)  $\frac{2n^0}{3n^1} \rightarrow \frac{2}{3} n^{0-1} \rightarrow \frac{2}{3} \boxed{n^{-1}} \rightarrow \boxed{\frac{2}{3n}}$

24)  $\frac{1r^{-1}}{3r^0} \rightarrow \frac{1}{3} r^{-1-0} \rightarrow \frac{1}{3} \boxed{r^{-1}} \rightarrow \boxed{\frac{1}{3r}}$

25)  $\frac{x^{-1}}{x^0} \rightarrow x^{-1-0} \rightarrow x^{-1} \rightarrow \boxed{\frac{1}{x}}$

26)  $\frac{2m^{-2}}{(2m^2)^{-1}} \rightarrow \frac{2^1 m^{-2}}{2^{-1} m^{-2}} \rightarrow 2^{1-(-1)} m^{-2-(-2)} \rightarrow 2^2 m^0 \rightarrow \boxed{4}$

27)  $\frac{(2n^{-2})^2}{n} \rightarrow \frac{2^2 n^{-2 \cdot 2}}{n} \rightarrow \frac{4n^{-4}}{n^1} \rightarrow 4n^{-4-1} \rightarrow 4n^{-5} \rightarrow \boxed{\frac{4}{n^5}}$

28)  $\frac{2n^2}{(n^2)^{-2}} \rightarrow \frac{2n^2}{n^{-4}} \rightarrow 2n^{2-(-4)} \rightarrow \boxed{2n^6}$

29)  $\frac{2a^0}{(a^0)^2} \rightarrow \frac{2a^0}{a^{0 \cdot 2}} \rightarrow \frac{2a^0}{a^0} \rightarrow 2a^{0-0} \rightarrow 2a^0 \rightarrow \boxed{2}$

30)  $\frac{(2v^2)^2}{2v} \rightarrow \frac{2^2 v^{2 \cdot 2}}{2v} \rightarrow \frac{4v^4}{2v^1} \rightarrow \frac{4}{2} v^{4-1} \rightarrow \boxed{2v^3}$