Name: SAMPLE Date: _____

8th Grade CHAPTER 8
PRACTICE 2

Simplify each expression. (1pt each)

	Answers
1) 2^7	1) 128
2) 4^{-3} $\frac{1}{4^3} =$	2) $\frac{1}{64}$
3) $\frac{1}{2^0}$	3) 1
4) Evaluate the expression for r = 3 (1 pt) $-r^{-2}$ $-\frac{1}{3^2} = -\frac{1}{9}$	4) $-\frac{1}{9}$
Write the number in standard notation. (2 pts) 5) 5.07×10^{-6} .00000507	5) .00000507
Write the number in scientific notation. (2 pts) 6) 5,490,000,000,000	6) 5.49×10^{12}

Simplify. Write your answer in scientific notation. (3pts each)

7) $(6.12 \times 10^{5})(12.5 \times 10^{-8})$

$$\begin{array}{r} 6.12 \\ \times\ 12.5 \\ \hline \end{array}$$

$76.50 \times 10^{5+-8}$

$7.65 \times 10^{1} \times 10^{-3}$

7.65×10^{-2}

7) 7.65×10^{-2}

Simplify. (2pts each)

8) $a^{6} \cdot a^{7}$

$a^{6+7} = a^{13}$

8) a^{13}

9) $b^{-9} \cdot b^{5}$

$b^{-9+5} = b^{-4} = \frac{1}{b^{4}}$

9) $\frac{1}{b^{4}}$

10) $\left(\frac{2x}{w}\right)^{4}$ $\quad \frac{2^{4}x^{4}}{w^{4}} = \frac{16x^{4}}{w^{4}}$

10) $\frac{16x^{4}}{w^{4}}$

11) $\left(\frac{3}{4}\right)^{-2}$ $\quad \left(\frac{4}{3}\right)^{2} = \frac{16}{9} = 1\frac{7}{9}$

11) $1\frac{7}{9}$

Simplify. (2pts each)

12) $(c^2)^5$

12) c^{10}

13) $(d^{-3})^8$

$d^{-24} = \frac{1}{d^{24}}$

13) $\frac{1}{d^{24}}$

Simplify. (3pts each)

14) $(x^{-2})^3 x^{-12}$

$x^{-6} x^{12} = x^{-18} = \frac{1}{x^{18}}$

14) $\frac{1}{x^{18}}$

15) $(5d^5)(3e^6)(3d^2)$

$45 d^7 e^6$

15) $45d^7e^6$

16) $(2g^2h^4)^{-5}(h^{-1}g^7)^6$

$2^{-5} g^{-10} h^{-20} h^{-6} g^{42}$

$\frac{1}{32} \cdot \frac{g^{32}}{1} \cdot \frac{1}{h^{26}} = \frac{g^{32}}{32h^{26}}$

16) $\frac{g^{32}}{32h^{26}}$

Simplify (1pt each)

17) $\frac{x^{13}y^2}{x^{13}y}$ $\quad 1 \cdot y^{2-1} = y$

$\frac{x^{13}}{x^{13}} = x^0 = 1$

17) y

18) $\left(\frac{p^{-2}q^4r}{p^3q^5}\right)^5$ $\quad \frac{p^{-10}q^{20}r^5}{p^{15}q^{25}} = p^{-25}q^{-5}r^5 = \frac{r^5}{p^{25}q^5}$

18) $\frac{r^5}{p^{25}q^5}$

19) $\left(\frac{2ab^6}{a^3b}\right)^{-2}$ $\quad \left(\frac{a^3b}{2ab^6}\right)^2$ $\quad \frac{a^6b^2}{4a^2b^{12}} = \frac{a^4}{4b^{10}}$

19) $\frac{a^4}{4b^{10}}$

20) **State the rule for the following geometric sequence.** (2pts)

4, 12, 36, 108, ... (×3, ×3)

20) $\times 3$

21) **Find the next 3 terms in this geometric sequence.** (2pts)

5000, 2500, 1250, 625, 312.5, 156.25 ($\times \frac{1}{2}$, $\times \frac{1}{2}$)

21) see left

22) **Find the first, third and fifth term of this geometric sequence.** (2pts)

$$A(n) = 5 \cdot 3^{n-1}$$

22) 5, 45, 405

Are the following sequences *Geometric*, *Arithmetic* or *neither*? (2pts each)

23) –0.3, –0.34, –0.5, –0.74, …

23) neither

24) –0.5, –0.05, –0.005, –0.0005, …

× $\frac{1}{10}$

24) geometric

25) 19.07, 18.23, 17.39, 16.55, …

+ -.84 + -.84

25) arithmetic