

Name: SAMPLE Date: _____

8th Grade CHAPTER 8
PRACTICE 2

Simplify each expression. (1pt each)

1) 2^7

Answers

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

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

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

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

$$7.65 \times 10^{-2}$$

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) $\left(\frac{2x}{w^4}\right)^4$

$$\frac{2^4 x^4}{w^4} = \frac{16x^4}{w^4}$$

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

11) $\left(\frac{3}{4}\right)^{-2}$

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

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

$$45d^7e^6$$

15) $45d^7e^6$

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

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

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

Simplify (1pt each)

17) $\frac{x^{13}y^2}{x^{13}y}$

$1 \cdot y^{2-1} = y$

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

17) $\frac{y}{1}$

18) $\left(\frac{p^{-2}q^4r}{p^3q^5}\right)^5$

$\frac{p^{-10}q^{20}r^5}{p^{15}q^{25}} = p^{-25}q^{-5}r^5$
 $\frac{r^5}{p^{25}q^5}$

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

19) $\left(\frac{2ab^6}{a^3b}\right)^{-2}$

$\left(\frac{a^3b}{2ab^6}\right)^2$

$\frac{a^6b^2}{4a^2b^{12}} = \frac{a^4}{4b^{10}}$

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

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

4, 12, 36, 108, ...
 $\times 3$ $\times 3$

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)

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

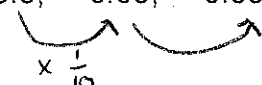
$$\begin{array}{r} 22) \quad \underline{5} \\ \quad \underline{45} \\ \quad \underline{405} \end{array}$$

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

23) $-0.3, -0.34, -0.5, -0.74, \dots$

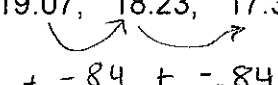
23) neither

24) $-0.5, -0.05, -0.005, -0.0005, \dots$



24) geometric

25) $19.07, 18.23, 17.39, 16.55, \dots$



25) arithmetic