Name: SAMPLE Date: _____

BLUE Ch.10 Practice 1

Evaluate the expression. (1pt each)

1) 4^4

$4 \times 4 \times 4 \times 4$.

Answers

1) 256

2) -3^3

$-3 \times 3 \times 3$

2) -27

3) $-\left(\frac{1}{4}\right)^3$ $-\frac{1^3}{4^3} =$

3) $-\frac{1}{64}$

4) $(-3)^5$

4) -243

Simplify each expression. (1pt each)

5) $a \cdot a \cdot a \cdot a \cdot a$

5) a^5

6) $g \cdot g^6 \cdot g^4$

$1+6+4$

g

6) g^{11}

Find the Greatest Common Factor. (2pts each)

7) $18x^3y^6$, $24x^3y^2$

2 9
3 3

3 8
2 4
2 2

2 3 3
2 2 2 3

$2 \cdot 3 = 6$

Answer: $6x^3y^2$

Find the Greatest Common Factor. (2pts each)

8) $8c^2de,\ 24cd^3$

Answer: $8cd$

Write in simplest form. (2pts each)

9) $\frac{5m^2n^6}{20mn^8}$

$\frac{1}{4} \cdot \frac{m^2}{m} \cdot \frac{n^6}{n^8}$

$\frac{1}{4} \cdot \frac{m}{1} \cdot \frac{1}{n^2}$

Answer: $\frac{m}{4n^2}$

10) $\frac{9a^8b^6c}{3a^5b^{10}}$

$\frac{3}{1} \cdot \frac{a^8}{a^5} \cdot \frac{b^6}{b^{10}} \cdot \frac{c}{1}$

Answer: $\frac{3a^3c}{b^4}$

11) $\frac{16g^2h}{4g^5h^2}$

$\frac{4}{1} \cdot \frac{g^2}{g^5} \cdot \frac{h}{h^2}$

Answer: $\frac{4}{g^3h}$

Simplify. Write the expression using only positive exponents. (2pts each)

12) $8x^{-4} \bullet 7x^{-2}$

$8 \cdot 7 \cdot x^{-4+-2}$

$\frac{56}{x^6}$

Answer: $\frac{56}{x^6}$

13) $\frac{u^3h^7}{u^5h^2}$

$u^{-2} \cdot h^7$

$\frac{1}{u^2} \cdot \frac{h^2}{1}$

Answer: $\frac{h^7}{u^2}$

Simplify. Write the expression using only positive exponents. (2pts each)

14) $\frac{(3g)^{-2}}{(f^2g)^5}$

$\frac{3^{-2}g^{-2}}{f^{10}g^5}$ $\frac{1}{9}\cdot\frac{1}{g^7}\cdot\frac{1}{f^{10}}$

Answer: $\frac{1}{9f^{10}g^7}$

15) $\frac{wx^2}{w^3v^9}$

$\frac{1}{w^2}\ \frac{x^2}{1}\ \frac{1}{v^9}$

Answer: $\frac{x^2}{w^2v^9}$

Write the number in scientific notation. (1pt each)

16) 575,000

Answer: 5.75×10^5

17) 0.0000345

Answer: 3.45×10^{-5}

Write the number in standard form. (2pts)

18) 5.9×10^{-6}

Answer: 0.0000059

19) 7.9×10^8

Answer: 790,000,000

20) 3.488×10^9

Answer: 3,488,000,000

Evaluate the expression. Write you answer in scientific notation. (2pts)

21) $(6.7 \times 10^{-7}) + (5.8 \times 10^{-7})$

$$\begin{array}{r} 6.7 \\ +\ 5.8 \\ \hline 12.5 \end{array}$$

Answer: 12.5×10^{-7}

22) $(6.8 \times 10^{-3}) - (8.5 \times 10^{-4})$

Answer: 5.95×10^{-3}

23) $(8.3 \times 10^{3}) \times (3 \times 10^{-6})$

$$\begin{array}{r} 8.3 \\ \times\ 3 \\ \hline 24.9 \end{array}$$

$2.49 \times 10^{1} \times 10^{3+-6}$

2.49×10^{-2}

Answer: 2.49×10^{-2}

24) $(6 \times 10^{-4}) \div (1.5 \times 10^{-6})$

$$1.5\overline{)60} \quad 4. \qquad \times 10^{-4--6}$$

Answer: 4×10^{2}

25) $(7.26 \times 10^{4}) + (3.4 \times 10^{4})$

$$\begin{array}{r} 7.26 \\ +\ 3.40 \\ \hline 10.66 \end{array} \times 10^{4}$$

1.066×10^{5}

Answer: 1.066×10^{5}

Evaluate the expression. Write you answer in scientific notation. (2pts)

26) $(2.8 \times 10^{-5}) - (1.6 \times 10^{-6})$

Answer: 2.64×10^{-5}

27) $(2.4 \times 10^{4}) \times (3.8 \times 10^{-6})$

$$\begin{array}{r} {\scriptstyle 1\ 3} \\ 2.4 \\ \times\ 3.8 \\ \hline {\scriptstyle 1}92 \\ +\ 720 \\ \hline 9.12 \end{array}$$

$9.12 \times 10^{4--6}$

Answer: 9.12×10^{10}

28) $(5.2 \times 10^{-3}) \div (1.3 \times 10^{-12})$

$$13\overline{)52} = 4$$

$4 \times 10^{-3--12}$

Answer: 4×10^{9}

29) It takes the Sun about 2.3×10^{8} years to orbit the center of the Milky Way. It takes Pluto about 2.5×10^{2} years to orbit the Sun. How many times does Pluto orbit the Sun while the Sun completes one orbit around the Milky Way? Write your answer in scientific notation.

$2.3 \times 10^{8} \div 2.5 \times 10^{2}$

$$2.5\overline{)2.3} = 0.92$$

$0.92 \times 10^{8--2}$

$9.2 \times 10^{-1+6}$

Answer: 9.2×10^{5} times