

Chapter 9 Review

Date _____ Period _____

1) Which of the following numbers are prime? Which are composite?

4, 7, 13, 14, 26, 29, 41, 45, 100

Prime: 7, 13, 29, 41
 Composite: 4, 14, 26, 45, 100

2) List all the factors of the following numbers:

A) 24 1, 2, 3, 4, 6, 8, 12, 24

B) 49 1, 7, 49

C) 120 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

3) List the prime factorization of the following numbers: (make a factor tree)

A) 20

$$\begin{array}{c} 20 \\ \swarrow \downarrow \\ 2 \quad 10 \\ \quad \swarrow \downarrow \\ \quad 2 \quad 5 \end{array} \quad 2^2 \cdot 5$$

B) 42

$$\begin{array}{c} 42 \\ \swarrow \downarrow \\ 2 \quad 21 \\ \quad \swarrow \downarrow \\ \quad 3 \quad 7 \end{array} \quad 2 \cdot 3 \cdot 7$$

C) 120

$$\begin{array}{c} 120 \\ \swarrow \downarrow \\ 4 \quad 30 \\ \swarrow \downarrow \quad \downarrow \\ 2 \quad 2 \quad 3 \quad 10 \quad 2 \\ \quad \quad \quad \quad \downarrow \\ \quad \quad \quad \quad 5 \end{array} \quad 2^3 \cdot 3 \cdot 5$$

4) Find the common factors between the two numbers. Then list the Greatest Common Factor.

A) 15 and 35
 15: 1, 3, 5, 15
 35: 1, 5, 7, 35
 Common factors: 1, 5
 GCF: 5

B) 24 and 40
 24: 1, 2, 3, 4, 6, 8, 12, 24
 40: 1, 2, 4, 5, 8, 10, 20, 40
 Common factors: 1, 2, 4, 8
 GCF: 8

C) 34 and 85
 34: 1, 2, 17, 34
 85: 1, 5, 17, 85
 Common factors: 1, 17
 GCF: 17

Write each number in scientific notation.

5) 0.000339

 3.39×10^{-4}

6) 0.00073

 7.3×10^{-4}

7) 0.053

 5.3×10^{-2}

8) 0.00095

 9.5×10^{-4}

Write each number in standard notation.

9) 6.1×10^{-1}

0.61

10) 2×10^4

20,000

11) 9.6×10^5

960,000

12) 5.5×10^{-5}

0.000055

Simplify.

13) $\sqrt{245}$ $\sqrt{49 \cdot 5}$
 $7\sqrt{5}$

14) $\sqrt{128}$ $\sqrt{64 \cdot 2}$
 $8\sqrt{2}$

15) $8\sqrt{75n}$

$8\sqrt{25 \cdot 3n}$
 $40\sqrt{3n}$

16) $-4\sqrt{24v^3}$

$-4\sqrt{4 \cdot 6v^2 \cdot v}$
 $-8v\sqrt{6v}$

Simplify. Your answer should contain only positive exponents.

17) $4x^2y^2 \cdot x^4y^3$

$4x^6y^5$

18) $(4xy)^4$

$256x^4y^4$

19) $\frac{4n^3n}{2m^2n^2}$

$\frac{2n}{m^2}$

20) $\frac{3x^2}{x^2 \cdot 2x}$

$\frac{3}{2x}$

21) $\frac{k^4}{(2k^3)^3}$

$\frac{k^4}{8k^9} = \frac{1}{8k^5}$

22) $2u^4v^{-4} \cdot u^0v^3$

$\frac{2u^4v^{-1}}{v} = \frac{2u^4}{v^2}$

23) $\frac{3x^{-4}y^2 \cdot x^2y^0}{x^2}$

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

$\frac{3}{x^2}$

24) $\frac{3a^{-2}b^0 \cdot 3a^4}{4b^{-3}}$

$\frac{9b^3a^2}{4a^2}$

$\frac{9a^2b^3}{4}$