Group Review Assignment (Sections 9.2 and 10.1–10.5)

Name_____

SHOW–YOUR–WORK. Work the problem in the space provided. Circle your final answer. If a question appears to not have instructions, the instructions for the previous question apply. Good luck and have fun!

Multiply, and then simplify if possible. Assume all variables represent positive real numbers.

1) $(4\sqrt{7} - 4)^2$

Find the distance between the pair of points.

2) (3.3, 5.2) and (–8.1, 3.6)
Approximate the distance to two decimal places.

3) $(2\sqrt{7}, -1)$ and $(5\sqrt{7}, 0)$

Use the properties of exponents to simplify the expression. Write with positive exponents.

4) $\dfrac{x^{-3/5} \cdot x^{4/3}}{x^{4/7}}$

Evaluate.

5) If $f(x) = \sqrt{2x + 8}$, find the value of f(7).

Rationalize the <u>numerator</u> and simplify. Assume all variables represent positive real numbers.

6) $\frac{7\sqrt{x}}{\sqrt{6y}}$

Use the product rule to multiply. Assume all variables represent positive real numbers.

7) $\sqrt{5} \cdot \sqrt{6}$

8) $\sqrt{5x^3} \cdot \sqrt{5x^5}$

Solve the absolute value equation.

9) $|6x + 3| + 2 = 6$

10) $|2x + 3| = 4$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. Write your answer in the blank provided and record your answer on the scantron answer sheet. (You will not be getting the scantron answer sheet back.) If a question appears to not have instructions, the instructions for the previous question apply. Good luck and have fun!

11) $|x| = 9$ 11) _____

A) 9, –9

B) 81

C) –9

D) 9

Add or subtract. Assume all variables represent positive real numbers.

12) $6\sqrt[3]{x^3y^7} - 2xy\sqrt[3]{8y^4}$ 12) _____

A) $4x^2y^3\sqrt[3]{y}$

B) $2xy^2\sqrt[3]{y}$

C) $2x^2y^2\sqrt[3]{2y}$

D) $4xy^3\sqrt[3]{8y}$

13) $\sqrt{6a} + 7\sqrt{216a} - 3\sqrt{150a}$ 13) _____

A) $4\sqrt{6a}$

B) $28\sqrt{372a}$

C) $4\sqrt{372a}$

D) $28\sqrt{6a}$

Find the root. Assume that all variables represent nonnegative real numbers.

14) $\sqrt[5]{\frac{243x^5}{y^{15}}}$ 14) _____

A) $\frac{3x}{y^{15}}$

B) $\frac{3x}{y^3}$

C) $\frac{x}{y^3}$

D) $\frac{3}{y^3}$

15) $-\sqrt[4]{81}$ 15) _____

A) 4.264

B) 9

C) –3

D) not a real number

Fill in the blank.

16) A number's distance from 0 is called its _____. 16) _____

A) solution

B) absolute value

C) intersection

D) union

Rationalize the <u>denominator</u> and simplify. Assume that all variables represent positive real numbers.

17) $\sqrt[3]{\frac{5}{9}}$ 17) _____

A) $\frac{\sqrt[3]{405}}{81}$

B) $\frac{\sqrt[3]{15}}{3}$

C) $\frac{\sqrt[3]{405}}{9}$

D) $\frac{\sqrt[3]{45}}{9}$

Find the square root. Assume that all variables represent positive real numbers.

18) $\sqrt{324}$ 18) _____

A) 18

B) 162

C) 19

D) not a real number

Use a calculator to approximate the square root to 3 decimal places. Check to see that the approximation is reasonable.

19) $\sqrt{2}$ 19) _____

A) 1.414

B) 1.419

C) 1.411

D) 2.000

Find the cube root.

20) $\sqrt[3]{\frac{x^{12}}{216y^6}}$ 20) _____

A) $\frac{x^3}{6y^3}$

B) $\frac{x^4}{6y^2}$

C) $\frac{x^4}{36y^2}$

D) $\frac{6y^2}{x^4}$

1) $128 - 32\sqrt{7}$
Objective: (10.4) Multiply radical expressions.

2) 11.51 units
Objective: (10.3) Use the Distance and Midpoint Formula

3) 8 units
Objective: (10.3) Use the distance and midpoint formula.

4) $x^{17/105}$
Objective: (10.2) Use the Rules for Exponents to Simplify Expressions that Contain Rational Exponents

5) $\sqrt{22}$
Objective: (10.1) Find function values of square and cube roots.

6) $\frac{7x}{\sqrt{6xy}}$
Objective: (10.5) Rationalize Numerators

7) $\sqrt{30}$
Objective: (10.3) Use the product rule for radicals.

8) $5x^4$
Objective: (10.3) Use the Product Rule for Radicals

9) $\frac{1}{6}, -\frac{7}{6}$
Objective: (9.2) Solve Absolute Value Equations

10) $\frac{1}{2}, -\frac{7}{2}$
Objective: (9.2) Solve Absolute Value Equations

11) A
Objective: (9.2) Solve Absolute Value Equations

12) B
Objective: (10.4) Add or subtract radical expressions.

13) D
Objective: (10.4) Add or Subtract Radical Expressions

14) B
Objective: (10.1) Find nth Roots

15) C
Objective: (10.1) Find nth Roots

16) B
Objective: (9.5) Vocabulary Check

17) B
Objective: (10.5) Rationalize denominators having one term.

18) A
Objective: (10.1) Find Square Roots

19) A
Objective: (10.1) Approximate roots.

20) B
Objective: (10.1) Find Cube Roots

Distance and Midpoint Formulas for Chapter 10 Test

Distance formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Midpoint formula: $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$