Name_____ Folder #_____

Date_____ Period_____

PreCalculus – Unit Exam – Properties of Real Numbers

MC _____ CR1_____ CR2_____ CR3_____

Score_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Simplify the expression. Assume that the variables in the denominator are nonzero.

1) $\dfrac{\left(x^{-4}y^{5}\right)^{-3}}{\left(y^{5}x^{-6}\right)^{-4}}$

A) $\dfrac{y^5}{x^{12}}$ B) $\dfrac{x^{12}}{y^5}$ C) $\dfrac{y^5}{x^6}$ D) $\dfrac{x^6}{y^5}$

Find the decimal form for the rational number. If it repeats, then so indicate with a bar.

2) $-\dfrac{3}{8}$

A) $-0.3\overline{75}$ B) -0.375 C) $-0.37\overline{5}$ D) $-0.\overline{375}$

3) $-\dfrac{22}{3}$

A) $-7.3\overline{3}$ B) $-7.\overline{3}$ C) -7.33 D) -7.34

Identify the base. Do not evaluate.

4) $-(-15)^9$

A) 9 B) -15 C) -9 D) 15

Use words to describe the interval of real numbers.

5) $(-2, 5)$

A) The real numbers greater than -2 and less than 5.
B) The real numbers less than 5.
C) The real numbers greater than or equal to -2 and less than 5.
D) The real numbers greater than -2.

Find the decimal form for the rational number. If it repeats, then so indicate with a bar.

6) $-\frac{22}{3}$

A) $-7.3\overline{3}$ B) -7.34 C) $-7.\overline{3}$ D) -7.33

Simplify the expression. Assume that the variables in the denominator are nonzero.

7) $\frac{x^2y^9}{x^7y^3}$

A) $\frac{x^5}{y^6}$ B) $\frac{x^6}{y^5}$ C) $\frac{y^6}{x^5}$ D) $\frac{x^5}{y^5}$

Use interval notation to describe the set of numbers.

8) John is over 17 years of age.

A) $(-\infty, 17]$ B) $[17, \infty)$ C) $(17, \infty)$ D) $[17, 55]$

Use an inequality to describe the interval of real numbers.

9) x is between -3 and 6.

A) $-6 < x < 3$ B) $-3 < x < 6$ C) $x \le 6$ D) $-3 \le x \le 6$

Write the number in decimal form.

10) 8.237×10^{-6}

A) $-8{,}237{,}000$ B) 0.00008237 C) 0.0000008237 D) 0.000008237

Write the number in scientific notation.

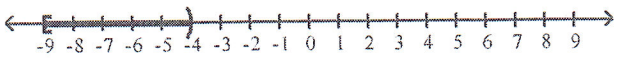
11) 692,710

A) 6.9271×10^{-5} B) 6.9271×10^{6} C) 6.9271×10^{1} D) 6.9271×10^{5}

12) 0.00004418

A) 4.418×10^{5} B) 4.418×10^{4} C) 4.418×10^{-4} D) 4.418×10^{-5}

Use an inequality to describe the interval of real numbers.

13) 

A) $-9 < x < -4$ B) $-9 \le x \le -4$ C) $-9 \le x < -4$ D) $-9 < x \le -4$

Simplify the expression. Assume that the variables in the denominator are nonzero.

14) $\left(\frac{2}{y^7}\right)^2$

A) $\frac{4}{y^{14}}$ B) $\frac{2}{y^{14}}$ C) $\frac{4}{y^7}$ D) $\frac{y^4}{4}$

Use interval notation to describe the interval of real numbers.

15) $x \le 1$

A) $(-\infty, 1]$ B) $[1, \infty)$ C) $(1, \infty)$ D) $(\infty, 1)$