Math 116A Group Review Assignment (6.7, 7.1–7.4)

Print Name_____

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 scantrom 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!

Solve.

1) The sum of two numbers is 15, and the sum of their squares is 125. Find the numbers. 1) _____

A) 6 and 9

B) 7 and 8

C) 5 and 10

D) 4 and 11

Find the domain of the rational expression.

2) $f(x) = \dfrac{1 - 8x}{x^2 - 12x - 28}$ 2) _____

A) $\{x \mid x \text{ is a real number and } x \neq -14, x \neq -2\}$

B) $\{x \mid x \text{ is a real number and } x \neq 14, x \neq -2\}$

C) $\left\{x \mid x \text{ is a real number and } x \neq 14, x \neq -2, x \neq \dfrac{1}{8}\right\}$

D) $\left\{x \mid x \text{ is a real number and } x \neq 14, x \neq -2, x \neq \dfrac{1}{8}, x \neq 0\right\}$

3) $f(w) = \frac{w^2 + 36w}{6w}$ 3) _____

A) $\{w \mid w \text{ is a real number and } w \neq 0\}$

B) $\{w \mid w \text{ is a real number and } w \neq 0 \text{ and } w \neq -36\}$

C) $\{w \mid w \text{ is a real number and } w \neq 6\}$

D) $\left\{w \mid w \text{ is a real number and } w \neq \frac{1}{6}\right\}$

Find the product and simplify.

4) $\frac{x^2 + 17x + 72}{x^2 + 18x + 81} \cdot \frac{x^2 + 9x}{x^2 + 5x - 24}$ 4) _____

A) $\frac{x}{x^2 + 18x + 81}$

B) $\frac{x}{x - 3}$

C) $\frac{x(x + 9)}{x - 3}$

D) $\frac{1}{x - 3}$

5) $\frac{8x^6y^4}{-24xy^{11}} \cdot y^7$ 5) _____

A) $\frac{x^5}{-3}$

B) $\frac{x^5y}{-3}$

C) $\frac{x^6}{-3}$

D) $\frac{x^6}{-3y}$

Rewrite the rational expression as an equivalent rational expression with the given denominator.

6) $\frac{20(x + 8)}{x(x + 4)} = \frac{}{x^3 + 9x^2 + 20x}$ 6) _____

A) $\frac{20(x + 5)}{x^3 + 9x^2 + 20x}$

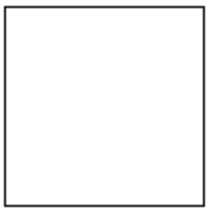
B) $\frac{20(x + 8)(x - 5)}{x^3 + 9x^2 + 20x}$

C) $\frac{20(x + 8)(x + 5)}{x^3 + 9x^2 + 20x}$

D) $\frac{(x + 8)(x + 5)}{x^3 + 9x^2 + 20x}$

Solve.

7) A square shaped pasture has a side of length $\frac{7}{x+3}$ meters. 7) _____



$\frac{7}{x+3}$ meters

Express the perimeter of the pasture as a rational expression.

A) $\frac{28}{x+6}$ m

B) $\frac{28}{x+3}$ m

C) $\frac{7}{x+12}$ m

D) $\frac{28}{x+12}$ m

Rewrite the rational expression as an equivalent rational expression with the given denominator.

8) $\frac{17}{20 - y} = \frac{}{y - 20}$ 8) _____

A) $-\frac{1}{y - 20}$

B) $-\frac{17}{y - 20}$

C) $-\frac{17(y - 20)}{y - 20}$

D) $\frac{17}{y - 20}$

Perform the indicated operation. Simplify if possible.

9) $\frac{x^2 - 1}{x^2 - 3x - 10} + \frac{7 + 2x}{10 + 3x - x^2}$ 9) _____

A) $\frac{x - 4}{x^2 - 3x - 10}$

B) $\frac{x - 4}{x - 5}$

C) $\frac{x + 2}{x - 5}$

D) $\frac{(x - 2)(x + 4)}{(x + 2)(x - 5)}$

10) $\frac{x}{2x - 3} - \frac{3}{8x - 12}$ 10) _____

A) $\frac{4x - 3}{2x - 3}$

B) $\frac{x - 3}{4(2x - 3)}$

C) $\frac{8x - 24}{4(2x - 3)}$

D) $\frac{4x - 3}{4(2x - 3)}$

11) $\frac{x - 2}{x^2 + 11x + 30} + \frac{3x + 7}{x^2 + 7x + 10}$ 11) _____

A) $\frac{4x + 5}{2x^2 + 18x + 40}$

B) $4x + 5$

C) $\frac{4x^2 + 25x + 38}{(x - 5)(x - 6)(x - 2)}$

D) $\frac{4x^2 + 25x + 38}{(x + 5)(x + 6)(x + 2)}$

Solve.

12) A window washer accidentally drops a bucket from the top of a 400–foot building. The height h of the bucket after t seconds is given by $h = -16t^2 + 400$. When will the bucket hit the ground? 12) _____

A) 80 sec

B) –5 sec

C) 25 sec

D) 5 sec

13) The side of a square equals the length of a rectangle. The width of the rectangle is 4 meters longer than its length. The sum of the areas of the square and the rectangle is 70 square centimeters. Find the side of the square. 13) _____

A) 5 cm

B) 25 cm

C) 2 cm

D) 7 cm

Answer Key
Testname: 16A_GRPREVASS_67_74

1) C
Objective: (6.7) Concept Extensions
2) B
Objective: (7.1) Find the domain of a rational expression.
3) A
Objective: (7.1) Find the domain of a rational expression.
4) B
Objective: (7.2) Multiply rational expressions.
5) A
Objective: (7.2) Multiply rational expressions.
6) C
Objective: (7.3) Write a rational expression as an equivalent expression whose denominator is given.
7) B
Objective: (7.3) Concept Extensions
8) B
Objective: (7.3) Write a rational expression as an equivalent expression whose denominator is given.
9) B
Objective: (7.4) Add and subtract rational expressions with unlike denominators.
10) D
Objective: (7.4) Add and subtract rational expressions with unlike denominators.
11) D
Objective: (7.4) Add and subtract rational expressions with unlike denominators.
12) D
Objective: (6.7) Solve problems that can be modeled by quadratic equations.
13) A
Objective: (6.7) Solve problems that can be modeled by quadratic equations.