Student: yaser almohaws **Submitted:** 11/28/14 10:26pm	**Instructor:** fahad aljabr **Course:** MATH-001: Fundamentals of Math 11415 **Book:** Bittinger: Introductory and Intermediate Algebra, 4e	**Assignment:** Graded Homework 6

1. Find all numbers for which the rational expression is undefined.

$$\frac{w-8}{9}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The rational expression is not defined for $w =$ ____.
  (Use a comma to separate answers as needed.)
- B. The rational expression is defined for every real number. ✓

2. Solve using the principle of zero products.

$0 = w(w+5)$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $w = 0, -5$ ✓
  (Use a comma to separate answers as needed.)
- B. There is no solution.

3. Find the LCM of $x^9 - 6x^8 + 9x^7$, $3x^2 - 27$ and $5x + 15$.

The LCM is $15x^7(x-3)(x-3)(x+3)$.

4. Divide and simplify.

$$\frac{u^2-25}{9u+45} \div \frac{3u^2-30u+75}{27u+135}$$

$$\frac{u^2-25}{9u+45} \div \frac{3u^2-30u+75}{27u+135} = \frac{u+5}{u-5}$$

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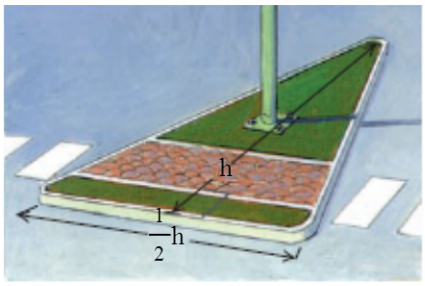
5. A triangular traffic island has a base half as long as its height. The island has an area of 144 m^2. Find the base and the height.



The height of the triangular traffic island is 24 m.

The base of the triangular traffic island is 12 m.

6. Find all numbers for which the rational expression is undefined.

$$\frac{x^2+13}{x^2-5x-6}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The rational expression is not defined for x = 6, −1.
  (Use a comma to separate answers as needed.)
- B. The rational expression is defined for every real number.

7. Multiply and simplify.

$$\frac{64d^2}{3d^2-6d+3}\cdot\frac{3d-3}{8d}$$

$$\frac{64d^2}{3d^2-6d+3}\cdot\frac{3d-3}{8d}=\frac{8d}{d-1}$$

(Type exponential notation with positive exponents.)

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8. Solve.

$s^2 + 8s + 15 = 0$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution(s) is/are $s =$ $-5, -3$.
(Type an integer or a simplified fraction. Use a comma to separate answers as needed. Type each solution only once.)

B. There is no solution.

9. A scientist wants to research the potential spread of germs by contact. She knows that the number of possible handshakes within a group of n people is given by the equation $N = \frac{1}{2}(n^2 - n)$. There are 100 people at a party. How many handshakes are possible?

How many handshakes are possible? 4950

10. Simplify by removing factors of 1.

$$\frac{2p^2 + 10p + 12}{4p^2 - 12p - 40}$$

The simplified form is $\frac{p+3}{2(p-5)}$.

11. A rectangular table is four times as long as it is wide. If the area is 196 ft^2, find the length and the width of the table.

The width of the table is 7 ft.

The length of the table is 28 ft.

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12. Find all numbers for which the rational expression is undefined.

$$-\frac{21}{16z}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The rational expression is not defined for $z =$ 0.
  (Use a comma to separate answers as needed.)
- B. The rational expression is defined for every real number.

13. If there are n teams in a league and each team plays each other twice in a season, the total number of games is given by the polynomial $n^2 - n = N$. A women's basketball league plays a total of 72 games. How many teams are in the league?

There are 9 teams in the league.

14. The product of two consecutive even integers is 360. Find the integers.

The positive set of correct answers is 20,18.
(Use a comma to separate answers as needed.)

The negative set of correct answers is $-20, -18$.
(Use a comma to separate answers as needed.)

15. Find all numbers for which the rational expression is undefined.

$$\frac{1}{8w+7}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The rational expression is not defined for $w =$ $-\frac{7}{8}$.
  (Use a comma to separate answers as needed.)
- B. The rational expression is defined for every real number.

16. Solve by factoring and using the principle of zero products. Remember to check.

$$0 = 2x + x^2 + 1$$

$x =$ -1 (Type an integer or a fraction.)

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17. Find all numbers for which the rational expression is undefined.

$$\frac{6}{y-1}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The number for which the rational expression is undefined is $y =$ 1 .
- B. The expression is defined for all values of y.

18. Solve.

$s^2 = 16$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is $s =$ $4, -4$.
  (Use a comma to separate answers as needed. Type each solution only once.)
- B. There is no solution.

19. Solve using the principle of zero products.

$3t(5t-3)(3t-1) = 0$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $t =$ $0, \frac{3}{5}, \frac{1}{3}$
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- B. There is no solution.

20. Find all numbers for which the rational expression is undefined.

$$\frac{m^3 - 5m}{m^2 - 64}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The rational expression is not defined for $m =$ $8, -8$.
  (Use a comma to separate answers as needed.)
- B. The rational expression is defined for every real number.