Name: _____ Math 8

Unit 2 Equations Test Review

1) The product of a number plus six and three is equal to twelve. Find the number.

 A) -6 C) -2
 B) 10 D) 2

Questions 2 through 5 refer to the following:

Solve the equation for the given variable:

2) $8 = 5z - 27$

 A) 1 C) 3
 B) 5 D) 7

3) $-78 = 5y + 27 - 8y$

 A) 35 C) 21
 B) 26 D) 17

4) $3(x + 4) = 30$

 A) $7\frac{2}{3}$ C) 6
 B) 14 D) -6

5) $7 - 2(x - 4) = 21 - 5x$

 A) 2 C) -2
 B) $\frac{6}{7}$ D) $7\frac{1}{3}$

6) What equation could be used to solve the problem below?

 If three times a number is increased by 24, the result is 4 less then seven times the number.

 A) $27x = 7x - 4$
 B) $3x + 24 = 4 - 7x$
 C) $3(x + 24) = 7x - 4$
 D) $3x + 24 = 7x - 4$

7) Which of the following equations has no solutions?

 A) $x - 7 = x$
 B) $7 - x = x + 7$
 C) $x - 7 = 0$
 D) $x - 7 = 2(x - 7) - (x - 7)$

8) The steps for solving the equation $3(2x - 6) = 2(3x - 9)$ are shown below.

 1. $3(2x - 6) = 2(3x - 9)$
 2. $6x - 18 = 6x - 18$
 3. $6x - 6x - 18 + 18 = 6x - 6x - 18 + 18$
 4. $0 = 0$

 What is the correct conclusion?

 A) The solution set is the empty set.
 B) $x = 0$ is the only solution.
 C) The equation is true for all values of x.
 D) $x = 18$ is the only solution.

9) Four times as many girls as boys participate in chorus. If there are a total of 140 girls and boys total, how many girls are in the chorus?

 A) 112 C) 105
 B) 28 D) 70

10) A typical bee colony consists of 30,000 to 60,000 bees. Currently, a beekeeper estimated that there were 10,000 bees in the colony. Every hour, 75 bees come back to the colony. At 6 PM, the beekeeper estimated that there were 10,675 bees in the colony. At what time of day did the beekeeper start keeping track of the number of bees in the colony?

Show your work.

Answer: _____

Questions 11 and 12 refer to the following:

Solve the following equation. Indicate, where appropriate, if the given equation has an empty solution set or an infinite number of solutions.

11) $4x - 5 = 3(6 + x) + x$

12) $14 - (2x + 5) = -2x + 9$

13) Solve and check: $2 + 3(x - 5) = x - 11$

14) Solve and check: $-2y - 17 - 22 = 2y + 3(y - 6)$

15) On a movie rental website, a monthly fee of $9 is charged for delivery and each rental costs a discounted rate of n dollars. If in one month Grady rents 14 videos and is charged a total of $58, how much does he pay per video rental?

Show your work.

Answer: $_____

1) C   2) D   3) A   4) C   5) A

6) D   7) A   8) C   9) A

10)   10 AM
WORK SHOWN: $h = \#$ of hours, $10{,}000 + 75h = 10{,}600$, $75h = 600$, $h = 8$, 6 PM $-$ 8 hrs $= 10$ AM

11)   The solution set is empty.

12)   Infinite number of solutions

13)   1

14)   -3

15) $3.50
WORK SHOWN: $14n + 9 = 58$, $49 \div 14 = 3.5$