**Algebra 1 Unit One Test Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Choose the statement that represents the first step in solving the equations. Circle your answer choice.**

**(1 point each)**

1. 3x + 4 = 12 2. $-4=\frac{n}{3}+2$
2. Add 4 to both sides a. Add 2 to both sides
3. Subtract 4 from both sides b. Subtract 2 from both sides
4. Divide by 3 on both sides c. Divide by 3 on both sides
5. Subtract 3 from both sides d. Multiply by 3 on both sides

**Solve each equation. Show each step. (4 points each)**

1. 3x + 2 = 6x – 1 4. $\frac{1}{4}+3n=\frac{3}{4}+4n$ 5. $\frac{3}{4}x=12$

6. 8x – 3(x + 7) = -3 7. 5m – 7 = 6m + 1 + 3m 8. 4(x + 1) = 2x + 1 + 3x

9. $\frac{n}{8}-1=4$ 10. $\frac{n-2}{6}=-4$

**Simplify each expression. Show each step. (3 points each)**

11. (-5m + 3) – (4m + 1) 12. (-2x + y) + (x + 4y)

**Evaluate the expression for the given value of the variables. (5 points)**

13. 6y - 5(x -2) when x = 6 and y = 1

**Complete each problem as directed.**

14. Which number does not belong in the given set and why? **(3 points)**

 3, $ 1$, $0, $ $\sqrt{16}$, 5

15. Identify the set of numbers that best describes values used in each situation, and explain why.

 **(3 points each)**

1. Money spent on a meal in a restaurant
2. Number of books on a shelf
3. Recipe for chocolate chip cookies

16. Write and solve an equation to find x and the length of each side in ABC when the perimeter is 31 cm.

 **(7 points)**

 A

 x + 5 x + 5

 B C

 x

17. Many major cities have bikes that people can rent to ride around town and then return. To prove you read this, draw a hexagon above this problem’s number. To rent a bike in downtown Denver, it costs an initial fee of $5 and then you are charged $0.25 for every minute you have the bike.

1. Write an equation that describes the cost *C* to have the bike for *m* minutes. **(1 point)**
2. Use your equation to find the number of minutes you could rent the bike for $20. **(4 points)**

18. Andy needs to have his garage door fixed that he bought at Home Depot. Home Depot will send a repairman to do the job at a rate of $20 an hour plus $60 for the new part. Andy’s neighbor told him that Ron’s Repair Shop does good work and will charge $30 an hour plus $20 for the new part.

1. When is the Home Depot cheaper? **(2 points)** b. When is Ron’s Repair Shop cheaper?  **(2 points)**
2. Based on cost, which repair service should Andy choose, and why? **(5 points)**