

Name: _____

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Unit 1 - Solving Equations Assignment

1. Simplify.

a) $15s - 18s^2 + 19s - 11s^4 - 13s - 10s$

b) $-2(2v - 4) - 3(v + 2)$

(5 marks)

2. Solve.

a) $x - 7 = 2$

b) $49 = 7x$

c) $6x + 8 = 20$

(3 marks)

d) $\frac{2r}{7} = -6$

e) $3x - 12 = 5x + 36$

(4 marks)

f) $2(t - 4) + 6 = 4(t + 5)$

g) $\frac{q-3}{2} - 1 = \frac{q+4}{5}$

(6 marks)

Application: Make sure to include therefore statements and units.

3. A banquet hall charges according to the equation $C = 25n + 250$, where C represents the total cost in dollars to rent the hall, and n represents the number of people attending the event.

a) If 85 people attend the event what is the total cost? **(1 mark)**

b) If the total cost to rent the hall for a particular event was \$3375, how many people attended the event? **(3 marks)**

4. The equation $s = \frac{w-10e}{t}$ models the speed in words per minute, s , at which someone types. The speed, s , is related to the number of words typed, w , and the number of *errors*, e , and the time spent typing, t .

a) Alex types 525 words in 5 min, with 10 errors. What is Alex's typing speed? **(2 marks)**

b) Melanie's typing speed is 100 word/min. She types 800 words in 7 min. How many errors did Melanie make? **(3 marks)**

5. A large water tank hold 100L of water. It is leaking at a rate of 3 L/min. The amount of water remaining in the tank can be represented by the equation $A = 100 - 3t$, where A represents an amount of water in L and t represents time in minutes.

a) Determine the amount of water remaining after 13 minutes. **(1 mark)**

b) Determine when the tank would be half full. **(2 marks)**

c) Approximately when would the tank be empty? **(2 marks)**

6. Find the speed of a truck that travels 262.5 km in 3.5 h if $d = st$. **(2 marks)**

7. Find the perimeter of the following figure. (Hint: $P = s + s + s$) **(3 marks)**

