**Unit 6**

**Solving Linear Equations**

Objectives:

* to model problems using linear equations
* to solve problems using linear equations

**Lesson 1 – Solving One-Step Equations ** (8.1)**

Warm up: Solve the following equations

1) 2) 3)

Solve for *x*

Method Two:

Method One:

Method Two:

Method One:





Method Two:

Method One:



Method Two:

Method One:



Check:

Method One:



Check:

Method One:

Word Problems:

1. The formula for speed is, where *s* is speed, *d* is distance, and *t* is time. The length of a Canadian football field, including the end zones, is 137.2 m. If a horse gallops at 13.4 m/s, how much time would it take the horse to gallop the length of the field? Express your answer to the nearest tenth of a second.
2. Winter Warehouse has winter jackets on sale 25% off the regular price. If a jacket is on sale for $176.25, what is the regular price of the jacket?

*Homework:*

**Lesson 2 – Solving Two-Step Equations with Fractions and Decimals Part 1 (8.2)**

*Warm up: Solve for x*

1. 2. 3.

4. 5. 6.

**Two-Step Equations with Fractions and Decimals**

Solve for

|  |  |
| --- | --- |
| **Method One: Put all terms over common denominator** | **Method two: Multiply both sides of equation by a common denominator** |

Solve for

|  |  |
| --- | --- |
| **Method One: Put all terms over common denominator** | **Method two: Multiply both sides of equation by a common denominator** |

Solve for x

|  |  |
| --- | --- |
| **Method One: solve as per normal two step equation** | **Method two: Multiply both sides of equation by 10, 100, or 1000 to remove the decimal then solve** |

**Practice on the Wall**

Solve each equation. Then, check your answer

**a)**  **b)** 

**c)**  **d)** 4*c* +  = 

**e)** 

***Homework:***

**Lesson 3 – Solving Two Step Equations with Fractions and Decimals Part 2 (8.2)**



Method Two: Multiply both sides by common denominator!

Method One:



Check:

Method One:



Method One:

Method Two: Multiply both sides by common denominator!

**Word Problems:**

1. Colin has a long-distance plan that charges 7¢/min for long distance calls within North America. There is also a monthly fee of $5.40. One month Colin’s total long distance charges were $36.76. How many minutes of long- distance calls did Colin make that month? Write an equation and solve this problem.
2. A cylindrical storage tank that holds 380 L of water is completely full. A pump removes water at a rate of 4.8 L/min. For how many minutes must the pump work until 200 L of water remain in the tank? Write an equation and solve this problem.
3. Alice and Tessa are the top scorers on their soccer team. This season, Alice scored 1/4 of their team’s goals and Tessa scored 1/6 of their team’s goals. Alice and Tessa together scored a total of 22 goals. How many goals did their team score? Write an equation and solve this problem.

***Homework:***

*Quiz next class on 8.1 and 8.2*

**Lesson 4 – Solving Distributive Property Equations (8.3)**

Solve for *x*

Method Two:

Method One:

Method Two:

Method One:



 Method One: Method Two:

On a typical February day in Whitehorse, Yukon Territory, the daily average temperature is -13.2 °C. The low temperature is -18.1 °C. What is the high temperature?

Two cars leave Seattle at the same time, travelling in opposite directions. Their average speeds differ by 15 km/h. After four hours the cars are 610 km apart. How fast was each car travelling  
 *Hint: distance= speed × time*?

*Homework:*

**Lesson 5 – Solving Equations with Variables on Both Sides (8.4)**



Warm up:

1) 2)

**Steps to solve equations with variables on both sides**

1) Remove any brackets by dividing of using the distributive property

2) Determine which side of the equation to put your variables and which to put your constants (it does not matter which side you pick, but frequently, one is easier)

3) Move the variable terms to one side of equation

4) Move all constant terms to the other side of equation

5) Combine like terms to simplify

6) Solve the equation

1) 2)

3) 4)

5) 6)

7) 8)

9) 10)

Word Problems

1) Alain has $35.50 and is saving $4.25/week. Eva has $24.25 and is saving $5.50/week. In how many weeks from now will they have the same amount of money?

2) Karen has 3 more dimes than quarters and 5 more nickels than quarters. If she has a total of **$5.35**. How many dimes, nickels and quarters does she have?

Step 1: Define your variables. Use letters that make sense for the question

Step 2: Write the information for the amount of each coin in “math language” from the question:

Step 3: Write an equation using expressions from step 2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 4: Solve Equation to find the unknown.

Step 5: Solve for the other unknowns

Step 6: Write a sentence than answers the question!

*Homework:*

*Next Class - Quiz 8.3/8.4 ! Word Problems Extra Practice Assignment 8.1-8.4;*

*Review; Unit Test:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*