

Day 2: Algebra Review

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AW Math 11

DAY 2 Algebra Review class notes

HOW TO Solve One-Step Equations Algebraically

Example 1: $3x = -12$

1. Write Equation	$3x = -12$
2. Perform the Opposite Operation	$\frac{\cancel{3}}{\cancel{3}}x = \frac{-12}{3}$
3. Cancel Out	
4. Write the Answer	$x = -4$
5. Check your Answer	$3 \times (-4) = -12$

Example 2: $\frac{n}{3} = -7$

1. Write Equation	$\frac{n}{3} = -7$
2. Perform the Opposite Operation	$\cancel{3} \frac{n}{\cancel{3}} = -7 \times 3$
3. Cancel Out	
4. Write the Answer	$n = -21$
5. Check your Answer	$\frac{-21}{3} = -7$

DAY 2 Algebra Review class notes continued**HOW TO** Solve Two-Step Equations Algebraically**Example 1:** $4t + 3 = 19$

1. Write Equation	$4t + 3 = 19$ $\quad -3 \quad -3$
2. Perform Opposite & Cancel <ul style="list-style-type: none"> ✓ 1st addition and subtraction ✓ 2nd multiplication and division 	$\frac{4t}{4} = \frac{16}{4}$
3. Write the Answer & Check	$t = 4$

Example 2: $\frac{p}{2} - 1 = 18$

1. Write Equation	$\frac{p}{2} - 1 = 18$ $\quad +1 \quad +1$
2. Perform Opposite & Cancel <ul style="list-style-type: none"> ✓ 1st addition and subtraction • 2nd multiplication and division 	$\frac{p}{2} = 19 \times 2$
3. Write the Answer & Check	$p = 38$ $\frac{38}{2} - 1 = 18$

DAY 2 *Algebra Review assignment*

Part 1: Algebra Review

1. Solve for each variable. (Check the steps on page 7 and 8 for help!)

a) $6z = -54$

f) $-3v + 10 = 40$

b) $5c = -50$

g) $-3u + 3 = -21$

c) $-4a = -20$

d) $3a + 5 = 2$

h) $-2b + 6 = -10$

e) $-2b + 9 = 25$

Part 2. Payday Loans

Complete the reading below on 'Payday Loans'. You will need a calculator for the end of this section.

Information from: Manitoba.ca > Department of Senior and Consumer Affairs Healthy Living

1. What is a payday loan?

A payday loan is a loan of money of not more than \$1500.00 for a term of no longer than 62 days (not including any extension or renewal).

2. What is a payday lender?

A payday lender is a licensed business or person who offers, arranges or provides a payday loan.

For example, this can include a business that only offers, arranges or provides a payday loan, or it can be a business that in addition to offering payday loans also offers other goods or services such as pawn broking, income tax rebating, or retail products.

3. What is the most I can be charged if I take out a payday loan?

The most you can be charged for a payday loan is 17% of the principal amount of the loan (\$17 per \$100 borrowed).

If you are charged more than the maximum rate allowed, you have the right to be reimbursed the entire amount of the fee charged.

4. What is the maximum amount I can borrow from a payday lender?

The maximum amount you can borrow from a payday lender depends on your monthly net income for the most recent previous calendar month. Your net pay must be determined using the formula found below. Once your net pay has been calculated, you will be able to borrow up to a maximum of 30% of your calculated net pay.

$$\text{Net pay (biweekly)} = \frac{\text{MNI} \times 12}{26}$$

In this formula, MNI is your net income for the most recent previous calendar

monthly net income

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month in which you received income. It is calculated by adding all of the sources of income you received during that month, minus all deductions.

Example: If your previous net pay is determined by the above formula to be \$1000, the most you can borrow is \$300. If you take out a 12 day payday loan, at the maximum rate of 17%, the chart below shows you the maximum you can be charged:

Net Pay as determined by net pay formula (\$)	Maximum amount you may borrow (\$)	Maximum rate you can be charged	How much it will cost you (\$)	How much you will have to repay (\$)	APR (%) <u>Annual Percentage Rate</u>
1000.00	300.00	17%	51.00	351.00	517%

$$1000 \times 0.3$$

$$300 \times 0.17$$

$$300 + 51$$

You try:

Calculate the APR using the following formula:

$I = Prt$ where **I** is the interest earned, **P** is the amount borrowed, **r** is the interest rate as a decimal, and **t** is the length of time the money is borrowed, in years.

$I = 51$

$P = 300$

$T = 12 \text{ days, which is } 12/365 \text{ or } 0.0329 \text{ years}$

r?

Questions:

1. What is a payday loan? Name a company that offers a payday loan.

↳ money mart, money drops

2. What does **APR** stand for? Why are payday loans such a profitable business? (Look at the APR in the reading above. In comparison, the annual percent interest on a typical bank or car loan ranges from 2% - 10% right now.)

3. What does **MNI** stand for?

4. Find **net pay**, if MNI = \$1500. Use the formula in the reading above.

5. Calculate the amount of interest if you get a **bank loan** for \$1000. Use the formula $I = Prt$, with the following:

- The principal is \$1000
- the rate is 7% (use as a decimal in formula, so $r = 0.07$)
- time is 1 yr (so use $t = 1$ in formula)

6. You are considering applying for a short-term payday loan.
- a) **Find your net pay** using the formula in the article. Your MNI is \$1300.

 - b) **Find the maximum you can borrow**, which is 30% of your net pay.

 - c) **Find the maximum the lender can charge you**, which is 17% of what you borrow.

 - d) **How much will you have to repay?** This value will be what you borrowed plus interest.

DAY 3 *Simple Interest class notes***Simple Interest**

To find the **simple interest earned**:
 $I = Prt$

To find the **final value**:
 $A = P + I$

Principal**Term****Rate****HOW TO** Solve Problems Involving Simple Interest

STEPS	Example 1: How much interest is earned on an investment of \$5000.00, at 3.00% per annum over a 2-year term?	Example 2: If the interest earned is \$45.00 and the rate is 4% for 3 years, calculate the principal that was invested.
1. Write your formula		
2. Write your 'knowns'		
3. Insert your 'knowns'		
4. Solve algebraically <i>(do the opposite!)</i>		