

ACP Applied Topics in Math- Section 11.1-11.2 Review

1. The regular price of a Samsung 40" LCD television is \$849 at Best Buy. This same model is on sale in the store this week for \$689. What is the percent decrease in the price of this TV?

$$\frac{689 - 849}{849} \times 100$$

1. 18.84%

2. You are excited that the new ipod has recently decreased in price by 15%, or \$42. What was the original price of the ipod?

$$.15x = 42$$

2. 280

3. A coat is marked down 10% and you have a coupon for an extra 15% off. Is that the same as a single discount of 25%? Explain why or why not.

$$\begin{aligned} 100(.10) &= 10 & 100 - 10 &= 90 \\ 90(.15) &= 13.5 & 90 - 13.5 &= \boxed{76.50} \\ 100(.25) &= 25 & 100 - 25 &= \boxed{75} \end{aligned}$$

Gracie borrows \$10,000 from a bank for 24 months. The rate of simple interest charged is 4.5%.

4. How much interest did she pay for the use of the money?

4. 900

$$10000(.045)(2)$$

5. What is the amount she repaid to the bank on the due date of the loan?

5. 10900

$$10000 + 900$$

Nick received a loan of \$5,500 with a simple interest rate of 8.25% for 90 days on October 1, 2009.
Nick made a payment of \$2,500 on November 1, 2009.

6. What is the maturity date of the loan?

6. Dec 30

$$\begin{array}{l} \text{Oct 1} \\ 274 + 90 = 364 \end{array}$$

7. Determine the amount credited to the principal on November 1, 2009.

7. 2460.93

$$\begin{array}{l} \text{Days Oct 1 to Nov 1} \\ 274 \quad 305 \quad 31 \text{ day} \\ I = 5500(.0825)\left(\frac{90}{360}\right) = 39.07 \\ \text{Pay} = 2500 - 39.07 = 2460.93 \end{array}$$

8. How much did he owe the bank on the date of maturity?
Show all work clearly in the process.

8. 3080.16

$$\begin{array}{l} \text{NB} = 5500 - 2460.93 = 3039.07 \\ \text{Day Nov 1 to Dec 30} \\ 305 \quad 364 = 59 \\ I = 3039.07(.0825)\left(\frac{59}{360}\right) = 41.09 \\ + 3039.07 \end{array}$$

9. What amount of total interest did he pay on the loan?

9. 80.16

$$39.07 + 41.09$$

Geena received a loan of \$1800 with a simple interest rate of 15% on August 1, 2009. She made a payment of \$500 on September 1, 2009, and a second partial payment of \$500 on October 1, 2009. The maturity date of the loan was November 1, 2009.

10. How much did she owe the bank on the date of maturity?
Show ALL work in the process.

10. _____

$$\text{Days Aug 1 to Sept 1} \\ 213 - 244 = 31 \text{ day}$$

$$I = 1800(.15)\left(\frac{31}{360}\right) = 23.25$$

$$P = 500 - 23.25 = 476.75$$

$$\text{NB} = 1800 - 476.75 = \boxed{1323.25}$$

$$\text{Days Sept 1 to Oct 1} \\ 244 - 274 = 30 \text{ days}$$

$$I = 1323.25(.15)\left(\frac{30}{360}\right) = 16.54$$

$$P_{\text{ay}} = 500 - 16.54 = 483.46$$

$$\text{NB} = 1323.25 - 483.46 = \boxed{839.79}$$

$$\text{Days Oct 1 to Nov 1} \\ 274 \quad 305 \quad 31 \text{ days}$$

$$I = 839.79(.15)\left(\frac{31}{360}\right) = 10.85$$

$$839.79 + 10.85 = \boxed{850.64}$$