



Warm-Up Activity #3 Name _____

**Concept: Understanding Percent
in the Real World**

Directions: Read the following statements. With a partner, decide if you think the statements are **true** or **false**. Circle the letter of your choice. If a statement is false, after the word, **Explanation**, tell **why** you think it is not true. When we go over the answers, change any that you got incorrect.

- T F** 1. A **portion** means the same as the whole quantity.
Explanation:
- T F** 2. When the denominator is 100, the portion is called a half quantity.
Explanation:
- T F** 3. Percentages **never** occur in real-life problems.
Explanation:
- T F** 4. A **percent** is a portion whose numerator is 100.
Explanation:
- T F** 5. Percents are the most commonly used way to describe parts to a whole.
Explanation:
- T F** 6. Before changing a fraction to a percent, you *must* first reduce the fraction.
Explanation:
- T F** 7. Rewriting each portion as a percent makes it easier to compare the portions.
Explanation:
- T F** 8. One of the main reasons for using percents is to make the work more difficult for students.
Explanation:



Warm-Up Activity #3

ANSWER KEY

Concept: Understanding Percent in the Real World

Directions: Read the following statements. With a partner, decide if you think the statements are **true** or **false**. Circle the letter of your choice. If a statement is false, after the word, **Explanation**, tell **why** you think it is not true. When we go over the answers, change any that you got incorrect.

- T** (F) 1. A **portion** means the same as the whole quantity.
Explanation: A portion is only a part of a whole.
- T** (F) 2. When the denominator is 100, the portion is called a half quantity.
Explanation: The portion is called a percent, the quantity out of a hundred.
- T** (F) 3. Percentages **never** occur in real-life problems.
Explanation: Percent occur very frequently in real life, i.e., income tax, sales tax, interest rates, sports statistics, stock market, etc.
- T** (F) 4. A percent is a portion whose **numerator** is 100.
Explanation: The denominator is 100 when writing percent.
- (T) **F** 5. Percents are the most commonly used way to describe parts to a whole.
Explanation:
- T** (F) 6. Before changing a fraction to a percent, you **must** first reduce the fraction.
Explanation: This makes the conversion easier but is not mandatory.
- (T) **F** 7. Rewriting each portion as a percent makes it easier to compare the portions.
Explanation:
- T** (F) 8. One of the main reasons for using percents is to make the work more difficult for students.
Explanation: Absolutely not! Using percents actually makes work easier.

Transparency for discussion of Effects of Changing Sales Tax Rates

Cost of Item	Sales Tax Rate	Amount of Tax	Total Cost
\$4.00	7.5%	30¢	\$4.30
	7.0%	28¢	\$4.28
	6.5%	26¢	\$4.26
\$40.00	7.5%	\$3.00	\$43.00
	7.0%	\$2.80	\$42.80
	6.5%	\$2.60	\$42.60
\$400.00	7.5%	\$30	\$430.00
	7.0%	\$28	\$428.00
	6.5%	\$26	\$426.00
\$4000.00	7.5%	\$300	\$4300.00
	7.0%	\$280	\$4280.00
	6.5%	\$260	\$4260.00



What's not spent today is saved for tomorrow!

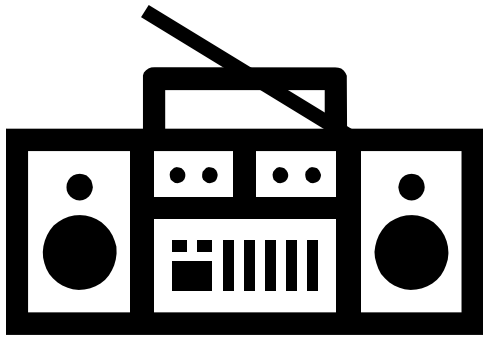
Information needed for **CREDIT CARD CALCULATOR**

(<http://www.calculatorweb.com/calculators/creditcardcalc.shtml>)

This calculator is designed to show you how long it will take to pay off your credit card and how much interest you will pay if you only make the minimum monthly payment.

- From your most recent credit card statement, enter your balance, annual interest rate and minimum payment requirements.
- Click once on the “Calculate” button to calculate your work.

ENTER DETAILS HERE	
Current Account Balance	\$ <input type="text"/>
Annual Interest Rate	<input type="text"/> %
Minimum Payment Percentage	<input type="text"/> %
Minimum Payment Amount	\$ <input type="text"/>
<input type="button" value="Calculate"/> <input type="button" value="Reset"/>	
RESULT	
Total Interest Paid	\$ <input type="text"/>
Number of Payments	<input type="text"/>
Number of Years	<input type="text"/>



Rock-On CD/Cassette Boom Box
Has mega bass, AM/FM stereo tuner
Regular Price: \$59.99



Rockette Disco CD Player
Has digital FM/AM tuning with
ESP. Includes headphones and
AC adapter. Regular Price: \$99.99



CD 100 Storage case.
Stores up to 100 CDs.
Regular Price: \$9.99



Blank CDs for all
your recording needs.

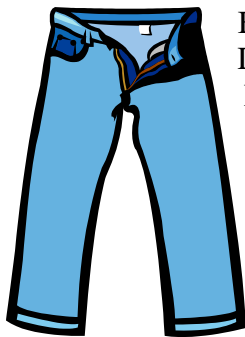
Regular Price: \$7 ea



60-in. Projection TV has 2-tuner
PIP, component video, S-video jacks,
digital comb filter. Regular Price: \$1,999.99

Entertainment
SALE
25% off

All clothing $\frac{1}{4}$ off



Boys/Girls
Designer Stonewash Jeans
Regular Price: \$27.99



Boys/Girls
Cotton/acrylic
shirts. M-XXL.
Regular Price: \$9

Sports Logo Hats
S-M-L
Regular Price: \$19



Ever Popular Flip-Flops
Assorted colors and sizes.
Regular Price: \$5.49/pair

Shoreline Mall Quality
Discount Merchandise

Percent in the Real World – Let’s Go Shopping!

“When Are We Ever Going To *USE* This MATH?”



Name _____

Date _____

Directions: Refer to the sales advertisement to answer the questions and/or complete the problems. Remember to continue to show justifications or explanations as necessary.

1. The sales advertisement describes the entertainment portion of the sale as 25% off and all clothing at $\frac{1}{4}$ off. Are these equivalent? Explain why, or why not?
2. Whether the merchandise is advertised at 25% off or $\frac{1}{4}$ off, explain what this means in terms of savings dollars.

For the following problems, Susan, Brandon, and Marc are shopping at Shoreline Mall.

3. Susan is invited to a bowling party this weekend and needs a new outfit. If she purchases a pair of jeans, a shirt, a sports hat, and a pair of designer flip-flops, how much would she pay at the regular price including sales tax of $7\frac{1}{2}\%$?

Work Space:

4. Refer to the sales advertisement and determine how much she will pay after the discount including sales tax of $7\frac{1}{2}\%$.
5. How much does she save by buying the clothes on sale?

Percent in the Real World Problem Solving Activity Sheet

6. Brandon received a gift certificate for his birthday in the amount of \$200. This is redeemable at Shoreline Mall Quality Discount Merchandise excluding tax. He must pay any taxes applied out of his own pocket. He cannot receive change from the gift certificate or qualify for the sale price. Therefore, he must come as close to \$200 at regular price before taxes. Make a list of items Brandon could buy with his gift certificate and not exceed the \$200. Show cost of each item and find the total cost at regular price including a $7\frac{1}{2}$ % sales tax.

7. If Brandon negotiated with the owner to let him purchase the listed items at the discount price, how much would he have left to buy something else?
Answer according to information given in Problem #7.

CASH VS. CREDIT

8. Marc is shopping at the Mall with Susan and Brandon. Marc is the BIG spender and purchases the 60 in. Projection TV. He figures this is a good deal since it is advertised at 25% off! What is the discount price for the TV including the $7\frac{1}{2}$ % sales tax?

9. Marc figures this is a good deal since it is advertised at 25% off! However, he certainly doesn't have the cash to pay for it. He uses his new credit card he just received that offers an interest rate of 18.9% and figures he can afford a \$60 monthly payment. This is his first charge on the new card. Use the credit card calculator located at Credit Card Calculator – Calculator Web (<http://www.calculatorweb.com/calculators/creditcardcalc.shtml>) to determine if the amount of interest he is charged is offset by the amount of discount he received by buying the TV on sale.

Percent in the Real World – Let’s Go Shopping!

“When Are We Ever Going To *USE* This MATH?”



Name **ANSWER KEY**

Directions: Refer to the sales advertisement to answer the questions and/or complete the problems. Remember to continue to show justifications or explanations as necessary.

1. The sales advertisement describes the entertainment portion of the sale as 25% off and all clothing at $\frac{1}{4}$ off. Are these equivalent? Explain why, or why not?

Yes, the two are equivalent. $25\% = 25/100$ which is the fraction $\frac{1}{4}$ when reduced to lowest terms.

2. Whether the merchandise is advertised at 25% off or $\frac{1}{4}$ off, explain what this means in terms of savings dollars.

25% off, or the equivalent $\frac{1}{4}$ off, means you are saving 25¢ out of every dollar spent before taxes or you pay only 75¢ for every dollar spent.

In problems 3 - 4, apply a $7\frac{1}{2}\%$ sales tax on the **total** of all items purchased.

3. Susan is invited to a bowling party this weekend and needs a new outfit. If she purchases a pair of jeans, a shirt, a sports hat, and a pair of Designer Flip-Flops, how much would she pay at the regular price including tax?

<i>Work Space:</i>	Jeans	\$27.99	\$61.48
	Shirt	9.00	<u>x .075</u> Sales Tax ($7\frac{1}{2}\%$)
	Hat	19.00	\$4.61
	Flip Flops	<u>5.49</u>	
		\$61.48	

TOTAL Cost @ Regular Price = \$61.48 + 4.61 = \$66.09

4. Refer to the sales advertisement and determine how much she will pay after the discount including tax.

\$61.48 Regular Price	\$61.48 Regular Price	\$46.11 Sale Price
<u>x $\frac{1}{4}$ or $\div 4$ or x .25</u>	<u>- 15.37</u> less $\frac{1}{4}$ off (25%) discount	<u>x .075</u> Sales Tax ($7\frac{1}{2}\%$)
\$15.37 Discount	\$46.11 Sale Price	\$ 3.46 Tax

TOTAL Cost @ discount price = \$46.11 + 3.46 = \$49.57

5. How much does she save by buying the clothes on sale? $\$66.09 - 49.57 = \underline{\$16.52}$

Sales Advertisement Problem Solving Answer Key

In problems #6 – #7, students' answers will vary.

6. Brandon received a gift certificate for his birthday in the amount of \$200. This is redeemable at Shoreline Mall Quality Discount Merchandise excluding tax. He must pay any taxes applied out of his own pocket. He cannot receive change from the gift certificate or qualify for the sale price. Therefore, he must come as close as possible to \$200 at regular price before taxes. Make a list of items Brandon could buy with his gift certificate and not exceed the \$200. Show cost of each item and find the total cost at regular price including a $7\frac{1}{2}\%$ sales tax.

Answers will vary.

Possible Solution:

CD Player	\$99.99
Rock-On Book Box	59.99
CD Storage Case	9.99
4 Blank CDs	<u>28.00</u>
Total	\$197.97

Tax $197.97 \times .075 = \$14.85$ Tax

TOTAL for merchandise = \$212.82

7. If Brandon negotiated with the owner to let him purchase the listed items at the discount price, how much would he have left on the gift certificate to buy something else excluding tax?

Answer according to information given in Problem #7.

Total for merchandise \$197.97 less 25%

$\$197.97 \times .25 = \49.49

$\$197.97 - 49.49 = \148.48

$\$200 - 148.48 = \51.52

CASH VS. CREDIT

8. Marc is shopping at the Mall with Susan and Brandon. Marc is the BIG spender and purchases the 60 in. Projection TV. What is the discount price for the TV including the $7\frac{1}{2}\%$ sales tax?

Regular Price of \$1999.99 less 25 % = $1999.99 \times .25 = 499.9975 \approx \500.00

$\$1999.99 - 500.00 = \$1499.99 \times 7\frac{1}{2}\%$ sales tax = $\$1499.99 \times .075 = \$112.49925 \approx \$112.50$

Discount Price including tax = $\$1499.99 + 112.50 = \1612.49

9. Marc figures this is a good deal since it is advertised at 25% off! However, he certainly doesn't have the cash to pay for it. He uses his new credit card he just received that offers an interest rate of 18.9% and figures he can afford a \$60 monthly payment. This is his first charge on the new card. Use the credit card calculator located at Credit Card Calculator – Calculator Web (<http://www.calculatorweb.com/calculators/creditcardcalc.shtml>) to determine if the amount of interest he is charged is offset by the amount of discount he received by buying the TV on sale.

Interest charged is \$501 over a period of 3 years not counting the annual fee for the card.