

## U2A – Percents

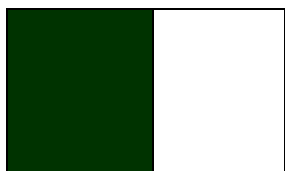
Name: \_\_\_\_\_

### Instructions:

Using a pencil, complete the following questions as you work through the related lessons. Show ALL work as is explained in the lessons. Do your best and ask questions if you don't understand anything!

### 2.1 Percents/Decimals/Fractions

Write each percent as a decimal and a fraction then draw a diagram to illustrate the percent. Your diagrams don't have to be exact! Reduce fractions to simplest form.

	Decimal	Fraction	Diagram
1.	50%		
2.	12%		
3.	120%		
4.	0.5%		

Write each fraction as a percent (to the nearest tenth) and a decimal

	Fraction	Percent	Decimal
5.	$\frac{1}{3}$		
6.	$\frac{6}{3}$		
7.	$\frac{18}{400}$		
8.	$\frac{6}{250}$		

Write each decimal as a percent and fraction. Reduce fractions to simplest form.

	Percent	Fraction
9.	.28	
10.	.89	
11.	.65	
12.	.07	

### 2.2 Percents less than one or greater than 100

Write each decimal as a percent and fraction. Reduce fractions to simplest form.

	Decimal	Percent	Fraction
1.	2.8		
2.		0.85%	
3.			8/5
4.		175%	
5.			3/2000

### 2.3 Solving problems with percents

Percent calculations (round to 2 decimal places where necessary)

1.	15% of 22	
2.	85% of 129	
3.	12% of 53	
4.	.5% of 18	
5.	13 is what % of 25	

6.	12 is what % of 20	
7.	44 is what % of 17	
8.	45 is what % of 231	
9.	40% of what number is 220	
10.	13% of what number is 12	
11.	60% of what number is 60	
12.	7% of what number is 13	

Estimating Percent – indicate whether the following are True or False

13.	16% of 23 > 15	
14.	44% of 55 > 44	
15.	4% of 125 > 20	
16.	17% of 200 < 15	
17.	70% of 90 > 52	
18.	140% of 66 < 70	

19 Seven hundred eighteen hockey players played in a tournament. Of these hockey players 6% scored goals. How many hockey players scored goals?

20. a. Glen wanted to buy a video game. In one store the price of the video game was \$32.99. On top of this was the GST (5%) and the PST (7%).

How much was the GST (round to 2 decimals)?

How much was the PST?

What was the total cost of the video game including taxes?

b. In another store the same video game at \$32.99 was on sale for 20% off. How much did it cost before taxes?

c. In a third store Glen was happy to find the game was selling for \$19.95. The sign said this was a 25% discount. What was the original price? (Keep in mind the sale price is 75% of the original price)

## 2.4 Percentage Increase

1. The average attendance at a local high school's football games went down from 2000 people in 2013 to 1500 people in 2015. What was the percent decrease in attendance at the football games?

2. The selling price of a home was dropped from \$200,000 to \$190,000. By what percent did the price drop?
  
  
  
  
  
  
  
  
  
  
3. If the price of a softball glove decreased from \$60 to \$36, what was the percent of decrease?
  
  
  
  
  
  
  
  
  
  
4. Mary decreased her time in the mile walk from 30 minutes to 24 minutes. What was the percent of decrease?
  
  
  
  
  
  
  
  
  
  
5. A DVD movie originally cost \$24.99. Its current price is \$19.99. What is the percent of change rounded to the nearest percent?

## 2.5 Combining percents

1. You and your brother went to dinner at Pasta Palace. You ordered a meal for \$6.25; your brother ordered a meal for \$7.50; The sales tax rate was 7.25% and you left a 15% tip. How much was the total bill?

2. At a restaurant you order dinner for \$20. In addition to the cost of the meal you must pay a 5% sales tax and leave a 10% tip. What is the total cost?
  
  
  
  
  
  
  
  
  
  
3. A bicycle shop is selling \$500.00 bikes at 10% off. If the sales tax is 7% how much will the bike cost?
  
  
  
  
  
  
  
  
  
  
4. Mary bought a bike priced at \$45. Shipping and handling cost an additional 15% of the price. The tax charged was 10%. What was the total cost of the bike, including shipping and handling and taxes?

Answers to selected problems:

2.1 Percents/ Decimals/Fractions

1. 0.5,  $\frac{1}{2}$  2. 0.12,  $\frac{6}{50}$  3. 1.2,  $\frac{6}{5}$  4. 0.005,  $\frac{1}{20}$  5. 33.3%, 0.333 6. 200%, 2 7. 4.5%, 0.045 8. 2.4%, 0.024 9. 28%,  $\frac{14}{50}$  10. 89%,  $\frac{89}{100}$  11. 65%,  $\frac{13}{20}$  12. 7%,  $\frac{7}{100}$

2.2 Percents greater than one or less than 100

1. 280%,  $\frac{14}{5}$  2. 0.0085,  $\frac{17}{2000}$  3. 1.6, 160% 4. 1.75  $1\frac{3}{4}$  5. 0.0015, 0.15%

2.3 Solving problems with Percents

1. 3.3 2. 109.65 3. 6.36 4. 0.09 5. 52% 6. 60% 7. 258.82% 8. 19.48% 9. 550 10. 92.31  
11. 100 12. 135.71 13. F 14. F 15. F 16. F 17. T 18. F 19. 43 20.a) \$1.65, \$2.31, \$36.95  
b)\$26 c)\$26.6

2.4 Percentage Increase

1. 25% 2. 5% 3. 40% 4. 20% 5. 20%

2.5 Combining Percents

1. \$16.81 2. \$23 3. \$481.5 4. \$56.25