Math   8   Ch# 5   Percentages WS 1   Name:_____*KEY*_____
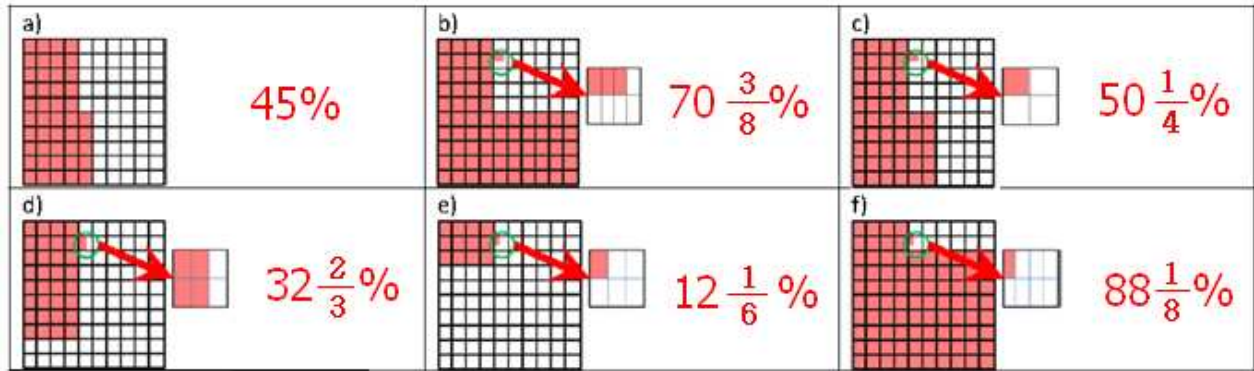
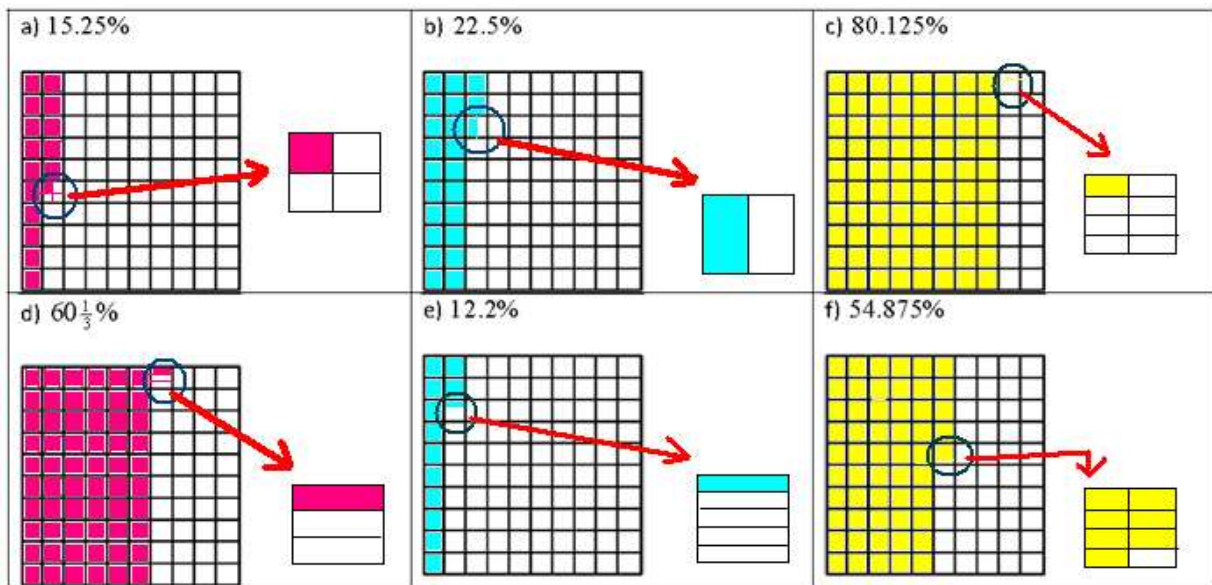Block:_____   Date:_____

What are Percentages?

1. For each of the following diagrams, find the corresponding percentages:

2. For each of the following percentages, draw it on the grid provided:

Math 8 Ch# 5 Applications of Percentages WS 2 **Name**:_____*Key*_____

Block:_____   Date:_____

1. Complete the following chart, find the total price after tax.

Price of the Items	Tax (HST 12%)	Total Cost
Textbook $85.00	$ 85.00 x 1.12 =	$95.2
Bicycle $545.00	$545.00 x 1.12 =	$610.4
Mac Book Pro $2500.00	$2500 x 1.12 =	$2800
Honda Civic 2012 $16,5000	$ 165000 x 1.12 =	$184800
(Challenge) Rolex Watch □	□ x 1.12 = $ 8176 □ = $8176/1.12 = $7300	$8,176

Since the item itself is 100%, therefore the quickest way to get to the total cost is multiply the cost by (100% + 12%) = 112%.

2. Carole works as a life insurance agent and earns 35% commission on all her sales. If her total sales last year was $1,250,000 how much commission did she earn?

Commission earned = percent x total sales = 35% x $1250000

= $437500

Ans: Carole earned $437500 from commission.

3. Kobe went to the Nike store to buy a pair of basketball shoes. The retail price is $175 and tax is 12%. How much does he need to pay?

Final price including tax = $175 x 1.12 = $196.

Ans: Kobe needs to pay $196.

4. Sally went to Aritzia to buy a dress with a retail price of $88. She waited till Boxing Day and the dress is discounted at 25% off. How much is the dress now?

25% off means she only pays 75% of the retail price.

Cost = 75% x $88 =   0.75 x $88   = $66.

Ans: The dress is $66 now.

5. Tiffany went to Best buy to buy a $3200 Samsung TV, a $1200 Stereo system, and a $350 Blu-ray Player. How much is the total cost including tax? (Assume HST = 12%)

The total cost including tax:

($3200 + $1200 + $350) x 112% = $4750 x 1.12

= $ 5320.

Ans: The total cost including tax is $ 5320.

6. Bob went to Tim Horton's to buy lunch for himself and his two friends. If lunch is worth $7.50 each, how much is the total price after tax?   (Assume HST = 12%)

The total cost including tax:

(3 x $7.50) x 112% = $22.50 x 1.12

= $ 25.2

Ans: The total cost after tax is $ 25.2

Math   8   Ch# 5   Percentages WS 3   Name:_____**Key**_____

Block:_____   Date:_____

Converting Fractions to Percentages and Decimals

1. Complete the following table by converting fractions to **decimals** and **percentages**:

Fractions	Lowest terms:	Decimal	Percentages:
$\dfrac{6}{8}$	$\dfrac{3}{4}$	0.75	75 %
$\dfrac{241}{400}$	$\dfrac{241}{400}$	0.6025	60.25%
$\dfrac{39}{65}$	$\dfrac{3}{5}$	0.6	60%
$\dfrac{555}{1000}$	$\dfrac{111}{200}$	0.555	55.5%
$\dfrac{7}{80}$	$\dfrac{7}{80}$	0.0875	8.75%
$1\dfrac{1}{3}$	$1\dfrac{1}{3}$	$1.\overline{333}$	$133.\overline{33}\%$

2. Write each of the following fractions as a decimal and percentage:

Fractions	Decimal	Percentages:
$\dfrac{4}{9}$	0.444....	$44.\overline{44}\%$
$\dfrac{2}{3}$	0.666...	$66.\overline{66}\%$
$\dfrac{5}{6}$	0.83333....	$83.\overline{3}\%$
$\dfrac{7}{11}$	0.6363....	$63.\overline{63}\%$
$\dfrac{3}{8}$	0.375	37.5 %
$\dfrac{34}{99}$	0.3434....	$34.\overline{34}\%$

3. Write each of the following decimals as a fraction in lowest terms and percentage:

Decimal	Fractions	Percentages:
0.375	$\dfrac{375}{1000} = \dfrac{3}{8}$	37.5 %
4.25	$4\dfrac{1}{4}$	425 %
0.0035	$\dfrac{35}{10000} = \dfrac{7}{2000}$	0.35%
$2.\overline{66}$	$2\dfrac{6}{9} = 2\dfrac{2}{3}$	$266.\overline{6}$ %
$0.\overline{27}$	$\dfrac{27}{99} = \dfrac{3}{11}$	$27.\overline{27}$ %
8.12	$8\dfrac{12}{100} = 8\dfrac{3}{25}$	812%
$0.\overline{033}$	$\dfrac{033}{999} = \dfrac{11}{333}$	$3.\overline{303}$%

4. Write each of the following percentages as a fraction and decimal:

Percentages:	Fractions	Decimal
12.5%	$\dfrac{125}{1000} = \dfrac{1}{8}$	0.125
180%	$\dfrac{180}{100} = 1\dfrac{4}{5}$	1.8
0.5%	$\dfrac{5}{1000} = \dfrac{1}{200}$	0.005
$123\frac{3}{4}$%	$1\dfrac{2375}{10000} = 1\dfrac{19}{80}$	1.2375
$85\frac{3}{5}$%	$\dfrac{856}{1000} = \dfrac{107}{125}$	0.856

Math 8 Ch# 5 Percentages WS 4   Name:___Key___

Block:_____   Date:_____

Evaluating the Percent of a Number

1. Determine the percent of each number. ***Give your answer to the nearest hundredth***:

40% of 300 = $0.4 \cdot (300)$	= 120.00
$75\frac{1}{2}\%$ of 424 = $75.5\% \cdot (424) = 0.755 \cdot (424)$	= 320.12
$80\frac{1}{3}\%$ of 180 = $\frac{241}{3}\% (180) = \frac{241}{300} \cdot (180)$ ↳ change to improper	= 144.60
1.25% of 600 = $0.0125 \cdot (600)$	= 7.50
$6\frac{1}{4}\%$ of 40 = $\frac{25}{400} \cdot 40$ ↳ change to improper	= 2.50
$10\frac{1}{3}\%$ of 630 = $\frac{31}{300} \cdot (630)$ ↳ improper	= 65.10
$8\frac{2}{5}\%$ of 125.50 = $\frac{42}{500} \cdot (125.50)$ ↳ improper	= 10.54

2. Max took his girlfriend to dinner at a nice restaurant. The bill was $84.20 and he needs to give a 15% tip. How much tip should he give?

$$15\% \cdot \$84.20 = 0.15 \cdot (84.20)$$
$$= \$ 12.63$$

3. Thomas was asked to find the percent of each number. The work below shows what he did. Indicate any mistakes that you see. If there are no mistakes, indicate that all the steps are correct:

a) 11% of 90	b) 120% of 32
$s1 = 11\% \times 90$ ✓	$s1 = 120\% \times 32$ ✓
$s2 = 11 \times 90$ ✗ $\quad 0.11 \times 90$	$s2 = 1.20 \times 32$ ✓
$s3 = 990 \quad = 9.9$	$s3 = 6.4$ ✗ $\quad = 38.4$

c) 130% of 45	d) 10.5% of 40
$s1 = 130\% \times 45$ ✓	$s1 = 10.5\% \times 40$ ✓
$s2 = (100\% + 30\%) \times 45$ ✓	$s2 = 10.5 \times 40 = 0.105 \times 40$ ✗
$s3 = (100\% \times 45) + (20\% \times 45)$ ✓ $\;30\%$	$s3 = 420 \quad = 4.2$
$s4 = 45 + 9 = 54$	
$45 + 13.5 = \boxed{58.5}$	

e) 250% of 180	f) $10\frac{1}{3}\%$ of 90
$s1 = 250\% \times 80 \quad \times 180$	$s1 = (10\% + 0.33\%) \times 90$ ✗
$s2 = 2.5 \times 80 \;/180$	$s2 = (10\% \times 90) + (0.33\% \times 90)$
$s3 = 200 \quad = \boxed{450}$	$s3 = 9 + 0.297$ ✗
	$s4 = 9.297$

$$= \left(10\% + \tfrac{1}{3}\%\right) \cdot 90$$
$$= (10\% \times 90) + \left(\tfrac{1}{300} \cdot 90\right)$$
$$= 9 + 0.3$$
$$= \underline{9.3}$$