

# NOTE TITLE: PERCENTS, DECIMALS AND FRACTIONS

## PERCENT REVIEW

### INTRODUCTION:

- What is a percent? ex. 50%  
What does it mean? 50/100  
How do you change 50% to a decimal?  
(divide 50 by 100)  
When would this be useful? shopping, using  
a calculator

### 1. TO CHANGE A PERCENT TO A FRACTION:

rule: % means  $\frac{\quad}{100}$

- 50% means  $50/100 = 1/2$   
25% means  $25/100 = 1/4$   
4.5% means  $4.5/100$   
100% means  $100/100 = 1$   
150% means  $150/100 = 3/2$

Complete the following:

- a) 5% =      b) 67% =      c) 1% =  
d) 200% =    e) 75% =      f) 20% =  
g) 10% =      h) 250% =     i) 17.5% =  
j) 0.69% =    k) 0.8% =     l) 2% =

### 2. TO CHANGE A FRACTION TO A DECIMAL:

rule: divide

- ex:  $1/2 = 0.5$   
 $3/4 = 0.75$   
 $1/3 = 0.3333 = 0.3$

Complete the following:

- a)  $1/5 =$       b)  $2/3 =$       c)  $3/10 =$   
d)  $2/5 =$       e)  $7/25 =$      f)  $49/50 =$   
g)  $32/35 =$     h)  $4/8 =$       i)  $105/100 =$   
j)  $6/5 =$       k)  $1/100 =$     l)  $3/2 =$

### MPM 1DO

#### Converting between Percents, Decimals and Fractions

#### A. Percent to a Fraction

Write the percent as a fraction out of a 100, then reduce if possible.

#### B. Percent to a Decimal equivalent

Divide the percent by 100.

#### C. Fraction to a Percent

Numerator divided by denominator then multiply by 100.

#### D. Fraction to a Decimal

Numerator divided by denominator. (

#### E. Decimal to a Percent

Multiply by 100 and don't forget to include the % sign.

#### F. Decimal to a Fraction

Identify the place value of the last digit on the right-hand side of the decimal point.

Use the place value to construct the denominator of the fraction.

The take the decimal number and use it without the decimal point as the numerator of the fraction. Reduce if possible to lowest terms.

### TIPS

1. When a decimal number has zero as the whole number part then write the zero  
ie. 0.125 not .125.

3. TO CHANGE DECIMALS TO PERCENT:

X 100 or move the decimal point 2 places to the right.

- ex.  
 $0.5 = 50\%$   
 $0.25 = 25\%$   
 $0.395 = 39.5\%$   
 $1.0 = 100\%$   
 $2.39 = 239\%$

Complete the following:

- a)  $0.3 =$       b)  $0.995 =$       c)  $4.2 =$   
 d)  $0.55 =$       e)  $0.39 =$       f)  $2.0 =$   
 g)  $1.75 =$       h)  $0.01 =$       i)  $0.05 =$   
 j)  $10.4 =$       k)  $0.001 =$       l)  $0.1234 =$

4. TO CHANGE FRACTIONS TO PERCENT:

divide numerator by denominator and x 100 or use the % key on the calculator

- ex:  
 $1/2 = 50\%$   
 $2/3 = 66.6\%$   
 $3/4 = 75\%$   
 $9/10 = 90\%$

Complete the following:

- a)  $4/5 =$       b)  $5/8 =$       c)  $3/25 =$   
 d)  $14/50 =$       e)  $20/40 =$       f)  $66/100 =$   
 g)  $20/60 =$       h)  $5/25 =$       i)  $3/7 =$   
 j)  $1/3 =$       k)  $4/10 =$       l)  $1/4 =$

5. TO CHANGE DECIMALS TO FRACTIONS:

rule: look at the place value (the decimal place)

- ex:  
 $0.5 = 5/10 = 1/2$   
 $0.75 = 75/100 = 3/4$   
 $1.5 = 15/10 = 1 5/10 = 1 1/2$   
 $0.375 = 375/1000$

Complete the following:

- a)  $0.3 =$       b)  $1.3 =$       c)  $0.44 =$   
 d)  $0.345 =$       e)  $0.05 =$       f)  $3.42 =$   
 g)  $0.95 =$       h)  $1.8 =$       i)  $0.78 =$   
 j)  $0.001 =$       k)  $0.12 =$       l)  $0.023 =$

6. TO CHANGE PERCENTS TO DECIMALS:

÷ 100 or move decimal 2 places to the left

- ex:  
 $50\% = 0.50$  or  $0.5$   
 $2\% = 0.02$   
 $100\% = 1.0$  or  $1$   
 $2.3\% = 0.023$

Complete the following:

- a)  $30\% =$       b)  $15\% =$       c)  $1\% =$   
 d)  $6.9\% =$       e)  $4.5\% =$       f)  $13\% =$   
 g)  $10.2\% =$       h)  $98\% =$       i)  $33 1/3\% =$   
 j)  $12 1/2\% =$       k)  $40\% =$       l)  $8 3/4\% =$

OTHER WORK TO DO:

- 1) p.17 #4acegk  
 2) p. 10/9 # 1, 2, 3, 4, 6, 7, 10, 11, 12, 15,

# NOTE TITLE: PERCENTS, DECIMALS AND FRACTIONS

ANSWERS

## PERCENT REVIEW

### INTRODUCTION:

- What is a percent? ex. 50%
- What does it mean? 50/100
- How do you change 50% to a decimal?  
(divide 50 by 100)
- When would this be useful? shopping, using a calculator

### 1. TO CHANGE A PERCENT TO A FRACTION:

rule: % means  $\frac{\quad}{100}$

- 50% means  $50/100 = 1/2$
- 25% means  $25/100 = 1/4$
- 4.5% means  $4.5/100$
- 100% means  $100/100 = 1$
- 150% means  $150/100 = 3/2$

Complete the following:

- a)  $5\% = \frac{5}{100} = \frac{1}{20}$  b)  $87\% = \frac{87}{100}$  c)  $1\% = \frac{1}{100}$
- d)  $200\% = \frac{200}{100} = 2$  e)  $75\% = \frac{75}{100} = \frac{3}{4}$  f)  $20\% = \frac{20}{100} = \frac{1}{5}$
- g)  $10\% = \frac{10}{100} = \frac{1}{10}$  h)  $250\% = \frac{250}{100} = \frac{5}{2}$  i)  $17.5\% = \frac{17.5}{100} = \frac{175}{1000} = \frac{7}{40}$
- j)  $0.69\% = \frac{69}{10000} = \frac{69}{10000}$  k)  $0.8\% = \frac{8}{1000} = \frac{1}{125}$  l)  $2\% = \frac{2}{100} = \frac{1}{50}$

### 2. TO CHANGE A FRACTION TO A DECIMAL:

rule: divide

- ex:  $1/2 = 0.5$
- $3/4 = 0.75$
- $1/3 = 0.3333 = 0.3$

Complete the following:

- a)  $1/5 = 0.2$  b)  $2/3 = .67$  c)  $3/10 = 0.3$
- d)  $2/5 = 0.4$  e)  $7/25 = 0.28$  f)  $49/50 = .98$
- g)  $32/35 = 0.91$  h)  $4/8 = \frac{1}{2} = 0.5$  i)  $105/100 = 1.05$
- j)  $6/5 = 1.2$  k)  $1/100 = 0.01$  l)  $3/2 = 1.5$

### MPM 100 Converting between Percents, Decimals and Fractions

#### A. Percent to a Fraction

Write the percent as a fraction out of a 100, then reduce if possible.

#### B. Percent to a Decimal equivalent

Divide the percent by 100.

#### C. Fraction to a Percent

Numerator divided by denominator then multiply by 100.

#### D. Fraction to a Decimal

Numerator divided by denominator. (

#### E. Decimal to a Percent

Multiply by 100 and don't forget to include the % sign.

#### F. Decimal to a Fraction

Identify the place value of the last digit on the right-hand side of the decimal point.

Use the place value to construct the denominator of the fraction.

The take the decimal number and use it without the decimal point as the numerator of the fraction. Reduce if possible to lowest terms.

### TIPS

- When a decimal number has zero as the whole number part then write the zero i.e. 0.125 not .125.

3. TO CHANGE DECIMALS TO PERCENT:

X 100 or move the decimal point 2 places to the right.

- ex.  
 0.5 = 50%  
 0.25 = 25%  
 0.395 = 39.5%  
 1.0 = 100%  
 2.39 = 239%

Complete the following:

- a) 0.3 = 30%    b) 0.995 = 99.5%    c) 4.2 = 420%  
 d) 0.55 = 55%    e) 0.39 = 39%    f) 2.0 = 200%  
 g) 1.75 = 175%    h) 0.01 = 1%    i) 0.05 = 5%  
 j) 10.4 = 1040%    k) 0.001 = 0.1%    l) 0.1234 = 12.34%

5. TO CHANGE DECIMALS TO FRACTIONS:

rule: look at the place value (the decimal place)

- ex:  
 0.5 = 5/10 = 1/2  
 0.75 = 75/100 = 3/4  
 1.5 = 15/10 = 1 1/2  
 0.375 = 375/1000

Complete the following:

- a) 0.3 =  $\frac{3}{10}$     b) 1.3 =  $\frac{13}{10}$   
 c) 0.44 =  $\frac{44}{100} = \frac{11}{25}$   
 d) 0.345 =  $\frac{345}{1000} = \frac{69}{200}$     e) 0.05 =  $\frac{5}{100} = \frac{1}{20}$   
 f) 3.42 =  $\frac{342}{100} = \frac{171}{50}$   
 g) 0.95 =  $\frac{95}{100} = \frac{19}{20}$     h) 1.8 =  $\frac{18}{10} = \frac{9}{5}$   
 i) 0.78 =  $\frac{78}{100} = \frac{39}{50}$   
 j) 0.001 =  $\frac{1}{1000}$     k) 0.12 =  $\frac{12}{100} = \frac{3}{25}$   
 l) 0.023 =  $\frac{23}{1000}$

4. TO CHANGE FRACTIONS TO PERCENT:

divide numerator by denominator and x 100

- ex:  
 1/2 = 50%  
 2/3 = 66.6%  
 3/4 = 75%  
 9/10 = 90%

Complete the following:

- a) 4/5 = 80%    b) 5/8 = 62.5%    c) 3/25 = 12%  
 d) 14/50 = 28%    e) 20/40 = 50%    f) 66/100 = 66%  
 g) 20/60 = 33.3%    h) 5/25 = 20%    i) 3/7 = 42.9%  
 j) 1/3 = 33.3%    k) 4/10 = 40%    l) 1/4 = 25%

6. TO CHANGE PERCENTS TO DECIMALS:

÷ 100 or move decimal 2 places to the left

- ex:  
 50% = 0.50 or 0.5  
 2% = 0.02  
 100% = 1.0 or 1  
 2.3% = 0.023

Complete the following:

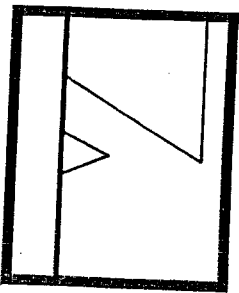
- a) 30% = 0.3    b) 15% = 0.15    c) 1% = 0.01  
 d) 6.9% = 0.069    e) 4.5% = 0.045    f) 13% = 0.13  
 g) 10.2% = 0.102    h) 98% = 0.98    i) 33 1/3% = 33.3% = 0.333  
 j) 12 1/2% = 12.5% = 0.125    k) 40% = 0.4    l) 8 3/4% = 8.75% = 0.0875

OTHER WORK TO DO:

- 1) p. 17 # 4 a, c, e, g, i, k  
 2) p. 28/19 # 1, 2, 3, 4, 6, 7, 10, 11, 12, 15,

2.5 167 2.5 15 26 72.3 72.3 230 70 230 75 1.5  
 40 84 84 2 26 40 7 40 84 2.5 26 70 7 26  
 4.25 72.3 84 150.5 75 230 75 1.5 150.5 230 40 45 167

TO DECODE THE TITLE OF THIS PICTURE:  
 Figure out the number that would replace the letter in any exercise below. Each time this number appears in the coded title, write the letter above it.  
**KEEP WORKING AND YOU WILL DECODE THE TITLE.**



- ①  $\frac{7}{10} = \frac{Y}{100} = V\%$
- ②  $\frac{13}{50} = \frac{A}{100} = A\%$
- ③  $\frac{9}{20} = \frac{C}{100} = C\%$
- ④  $\frac{3}{4} = \frac{N}{100} = N\%$
- ⑤  $\frac{21}{25} = \frac{O}{100} = O\%$
- ⑥  $\frac{2}{5} = \frac{T}{100} = T\%$
- ⑦  $\frac{6}{300} = \frac{L}{100} = L\%$
- ⑧  $\frac{75}{500} = \frac{P}{100} = P\%$
- ⑨  $\frac{49}{700} = \frac{E}{100} = E\%$
- ⑩  $\frac{3}{200} = \frac{G}{100} = G\%$
- ⑪  $\frac{17}{400} = \frac{D}{100} = D\%$
- ⑫  $\frac{30}{1200} = \frac{S}{100} = S\%$
- ⑬  $\frac{723}{1000} = \frac{R}{100} = R\%$
- ⑭  $\frac{167}{100} = H\%$
- ⑮  $\frac{23}{10} = \frac{I}{100} = I\%$
- ⑯  $\frac{301}{200} = \frac{W}{100} = W\%$

BB-36

TO FIND THE HIDDEN MESSAGE:  
 Each row across has 6 rectangles. Only 4 of them contain TRUE equations. Circle the letter in the row of boxes at the bottom of the page. You will spell out an 8-word message.

5-E	13-A	10-H	16-O	20-S	8-T
68% = 0.68	51% = 5.1	7% = 0.07	1% = 0.01	99% = 0.99	6% = 0.006
14-A	24-D	12-L	3-O	17-B	13-E
5% = 0.05	25% = 0.25	2% = 0.2	8% = 0.08	65% = 0.065	43% = 0.43
2-F	1-A	8-S	23-E	18-R	12-R
8.3% = 0.83	40% = 0.4	33.3% = 0.333	1.9% = 0.019	70% = 0.7	10% = 0.1
17-A	7-I	2-N	11-I	19-I	6-M
87.5% = 0.875	0.5% = 0.005	150% = 1.5	37.5% = 3.75	4.5% = 0.045	0.1% = 0.01
11-E	6-N	9-T	22-T	18-F	9-W
233% = 2.33	0.7% = 0.007	0.01% = 0.001	180% = 0.18	90% = 0.9	1.1% = 0.011
15-S	22-R	4-V	15-L	21-B	21-D
400% = 0.4	66.7% = 0.667	0.2% = 0.002	30% = 0.3	75% = 0.75	4% = 0.4

BB-40

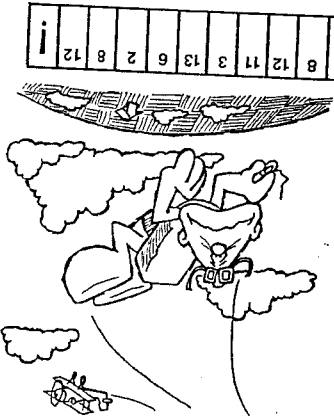
- $\frac{-001}{3} = \frac{1}{651} = \frac{9}{7} = \frac{51}{8} = \frac{5}{5} = \frac{1}{2}$
- $\frac{821}{6} = \frac{7}{3} = \frac{56}{22} = \frac{81}{1} = \frac{6}{2} = \frac{1}{2}$
- $\frac{32}{2} = \frac{11}{61} = \frac{66}{72} = \frac{21}{5} = \frac{8}{3} = \frac{2}{5}$
- $\frac{31}{1} = \frac{91}{32} = \frac{8}{7} = \frac{3}{2} = \frac{7}{5} = \frac{3}{5}$

BB-38

BB-39

- ⑬  $\frac{12.500}{17} = 0.00136 = \%$
- ⑫  $\frac{2000}{11} = 0.0055 = \%$
- ⑪  $\frac{127}{1} = 0.007874 = \%$
- ⑩  $\frac{64}{247} = 3.859375 = \%$
- ⑨  $\frac{75}{202} = 2.6933333 = \%$
- ⑧  $\frac{49}{43} = 1.1395348 = \%$
- ⑦  $\frac{3}{4} = 1.33333333 = \%$
- ⑥  $\frac{8}{1} = 0.0123456 = \%$
- ⑤  $\frac{23}{20} = 0.8695652 = \%$
- ④  $\frac{16}{1} = 0.0625 = \%$
- ③  $\frac{27}{11} = 0.4074074 = \%$
- ②  $\frac{32}{19} = 0.59375 = \%$
- ①  $\frac{12}{11} = 0.9166666 = \%$

Each quotient is given as it would appear on an 8-digit hand calculator. Use this information to express any fraction below as a percent rounded to the nearest tenth of a percent. Find your answers in the answer columns and notice the letter next to it. Write this letter in each box at the bottom of the page that contains the exercise number. KEEP WORKING AND YOU WILL DISCOVER THE ANSWER TO THE TITLE QUESTION.



- Ⓜ 113.9%
- Ⓛ 59.4%
- Ⓚ 385.9%
- Ⓠ 40.8%
- Ⓝ 0.2%
- Ⓡ 114.0%
- Ⓢ 133.4%
- Ⓟ 1.2%
- Ⓝ 86.9%
- Ⓡ 269.4%
- Ⓡ 133.3%
- Ⓡ 0.6%
- Ⓡ 1.3%
- Ⓡ 87.0%
- Ⓡ 0.7%
- Ⓡ 91.8%
- Ⓡ 6.3%
- Ⓡ 269.3%
- Ⓡ 62.5%
- Ⓡ 289.3%
- Ⓡ 133.3%
- Ⓡ 0.5%
- Ⓡ 386.0%

What Do You Call The Situation When Your Parachute Doesn't Open?

Career Information

- 1. A TELEVISION REPAIRMAN IS SOMEBODY WHO ... 3% 22% 53% 233%
- 2. A TAXIDERMIST IS SOMEBODY WHO ... 3% 6% 77% 233%
- 3. A TREE SURGEON IS SOMEBODY WHO ... 3% 22% 53% 233%

