Warm Up Grade 8

Feb. 23, 2016

Fill in the chart

Percent	Decimal	Fraction
55 %	0.55	$\frac{11 \times 5}{20 \times 5} = \frac{55}{100}$
14.4 %	0.144 (thousandths)	$\frac{144 \div 2}{1000 \div 2} = \frac{72 \div 2}{500 \div 2} = \frac{36}{250}$ $\frac{18}{125}$
17 %	0.17	$\frac{17}{100}$
65 %	0.65	$\frac{65 \div 5}{100 \div 5} = \frac{13}{20}$
150 %	1.5 (tenths)	$\frac{15 \div 5}{10 \div 5}$ $\frac{3}{2} = 1\frac{1}{2}$

÷100 ×100

$$10.9\% = \frac{10.9 \times 10}{100 \times 10} = \boxed{\frac{109}{1000}}$$

0.109 decimal place values: thousandths

$\frac{109}{1000}$

pg.239 #1-3, 5-9, 12-14

1. Hundreds grid
Show 100% → shade in all squares
1% → shade in one square

2. Show 0% → don't shade any in.

3. ★ $\frac{1}{5} = \frac{20}{100}$ or 20% $= 0.2$

$\frac{1}{5}\%$ is less than 1%, so they are not the same

0.2% or 0.002

5. In Ex 3, you could solve without finding percent, because you could estimate

$\frac{23\frac{1}{2}}{30} \approx \frac{24}{30} = \frac{8}{10}$

$\frac{31\frac{1}{2}}{40} \approx \frac{32}{40} = \frac{8}{10}$ ⇒ has smaller pieces, therefore is greater

6

	Fraction	Decimal	Percent
a)	$\frac{50}{100}$	0.50	50%
★b)	$\frac{36}{100} = \frac{18}{50} = \frac{9}{25}$	0.36	36%
★c)	$\frac{87}{100} =$	0.87	87%
d)	$\frac{4}{100} = \frac{1}{25}$	0.04	4%

0.35 % $\xrightarrow{\div 100 \text{ to get decim}}$ 0.0035

7.

		Fraction	Decimal
★a)	3%	$\frac{3}{100}$	0.03
b)	51	$\frac{51}{100}$	0.51
★c)	98%	$\frac{98}{100} = \frac{49}{50}$	0.98
d)	29%	$\frac{29}{100}$	0.29

8.

	Fraction	Decimal	Percent
★a)	$\frac{12.5}{100} = \frac{125}{1000} = \frac{1}{8}$	0.125	12.5%
★b)	$\frac{8525}{10000}$	0.8525	85.25%
★c)	$\frac{3475}{10000}$	0.3475	34.75%

9

		Fraction	Decimal
★a)	73.5%	$\frac{735}{1000}$ $\left(\frac{73.5}{100}\right)$	0.735
b)	21.25%	$\frac{2125}{10000}$ $\left(\frac{21.25}{100}\right)$	0.2125
★c)	$8\frac{3}{4}\%$ 8.75%	$\frac{875}{10000}$ $\left(\frac{8.75}{100}\right)$	0.0875
d)	$1\frac{1}{5}\%$ 1.2%	$\frac{12}{1000}$ $\left(\frac{1.2}{100}\right)$	0.012

12

	Fraction	Decimal
a) 0.25%	$\frac{0.25}{100} = \frac{25}{10000}$	0.0025
b) 0.6%	$\frac{0.6}{100} \xrightarrow{\times 10} \frac{6}{1000} = \frac{3}{500}$	0.006
c) 0.5%	$\frac{0.5}{100} = \frac{5}{1000}$	0.005
d) 0.38%	$\frac{0.38}{100} \xrightarrow{\times 100} \frac{38}{10000}$	0.0038

13.

	Decimal	Percent
a) $\frac{2}{300} = \frac{1}{150}$	0.00667	0.667%
b) $\frac{18}{400} \xrightarrow{\div 4} \frac{4.5}{100}$	0.045	4.5%
c) $\frac{7}{500}$	0.014	1.4%
d) $\frac{8}{250}$	0.032	3.2%

14.

		Fraction	Percent
a)	0.345	$\frac{345}{1000}$	34.5%
☆ b)	0.0023	$\frac{0.23}{100}$ $\left(\frac{23}{10000}\right)$	0.23%
☆ c)	0.1825	$\frac{18.25}{100}$ $\left(\frac{1825}{10000}\right)$	18.25%
d)	0.007	$\frac{0.7}{100}$ $\left(\frac{7}{1000}\right)$	0.7%

☆16) Vince 82.5%

Cal Junita $\frac{15}{18} = \frac{5}{6} = 83.3\%$

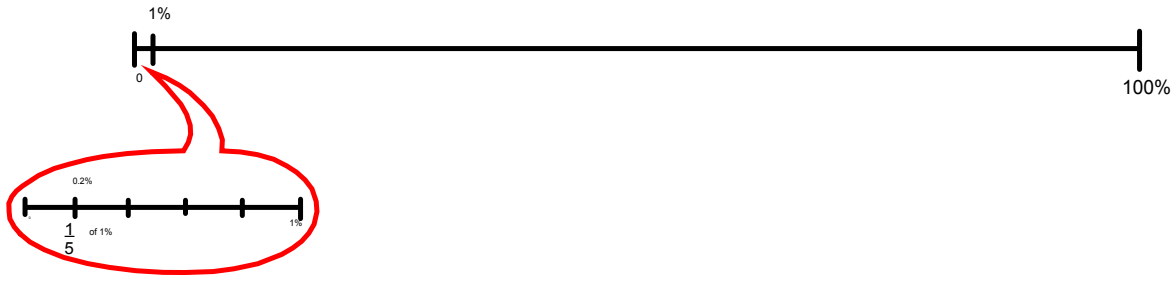
Vince did better

Recall that when the whole is 1.0, you know that:

100% = 1.0
10% = 0.1
1% = 0.01

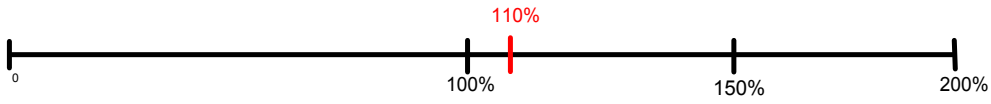
We can extend the pattern to write percents less than 1% as decimals:

0.1% = 0.001
0.5% = 0.005



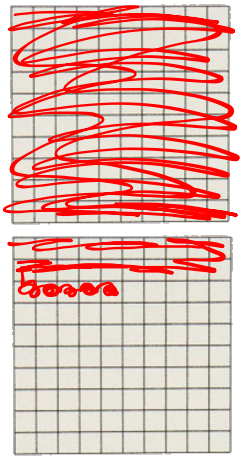
We can extend the pattern to write percents greater than 100% as decimals:

	Decimal
101% =	1.01
110% =	1.10
150% =	1.50
200% =	2.00

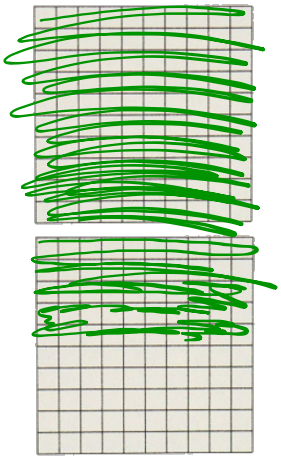


1) One hundred chart represents 100%. Shade hundred charts to show each precent. Write each percent as a fraction and as a decimal.

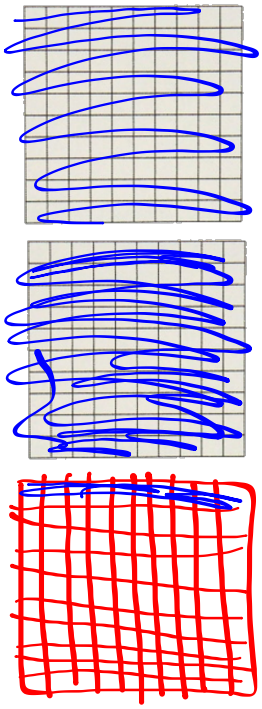
a) 125%



b) 150%

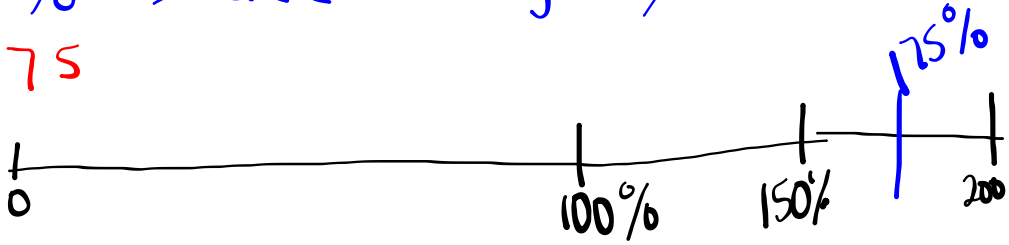


c) 210%



2)Write each percent as a decimal and draw a number line to show the percent. (% → dec ÷ by 100)

a) 175% = 1.75



b) 0.5% = 0.005

÷ by 100

Finding Percents of a Number

What does "of " mean in math?

Of means to multiply

Mentally

So how do you find the percent of a number?
How many different methods can you use to find :

(a) 50% of 70

$\frac{1}{2}$ of 70

$= 35$

(b) 10% of 120

$\frac{10}{100} = \frac{1}{10}$

$\frac{1}{10}$ of 120, like ÷ by 10

12

(c) 25% of 80

$25\% = \frac{1}{4}$

like ÷ by 4

$\frac{1}{4}$ of 80

$= 20$

(d) 57% of 31

50% of 31 = 15.5

1% of 31 = 0.31

like ÷ by 100 ×7

7% of 31 = 2.17

50% + 7%

15.5 + 2.17

17.67

What percents can you find mentally?

Pass out and discuss notes, on next slide

Estimating and Mentally Calculating Percents

There are several percents that you can figure out without a calculator.

100 % - 100% of a number is the number itself.
50% - You can easily find 50% of a number by dividing the number by 2. **Ex. 50% of 68 = 34**
25% - You can easily find 25% of number by dividing the number by 4. **Ex. 25% of 64 = 16**
10% - You can easily find 10% of a number by dividing the number by 10. **Ex. 10% of 678 = 67.8** (move decimal place left)
1% - You can easily find 1% of a number by dividing the number by 100. **Ex. 1% of 52.8 = 0.528** (move decimal 2 places left)
33 1/3 % - You can easily find 33 1/3% of a number by dividing the number by 3.

So if you can find the above percent, then there are also many, many more that you can find.

How can you find:

5% - find 10%, then divide by 2.
20% - Find 10%, then multiply by 2.
30% - find 10% then multiply by 3.
60% - find 10% then multiply by 6.
2% - find 1% then multiply by 2.
4% - find 1% then multiply by 4.
11% - find 10%, find 1% then add the 2 answers
15% - Find 10%, then find 5% then add the 2 answers.
75% - find 25% then multiply by 3.
90% - find 100%, then find 10% and subtract the answers.
55% - find 50%, then find 5% and add the answers.
150% - find 100%, then find 50% and add the answers.

If you have to estimate a percent, change the percent to the closest number that you can find mentally, or change the number itself to an easy number to work with.

30% of 50

First find 10% of 50 = 5
(like ÷ by 10)

x3 x3

30% of 50 = 15

Class / Homework

Page 246

calculator

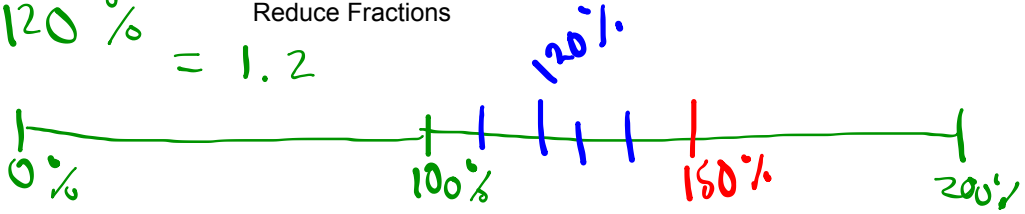
#5, #6, #10, #11

No calculators
Reduce Fractions

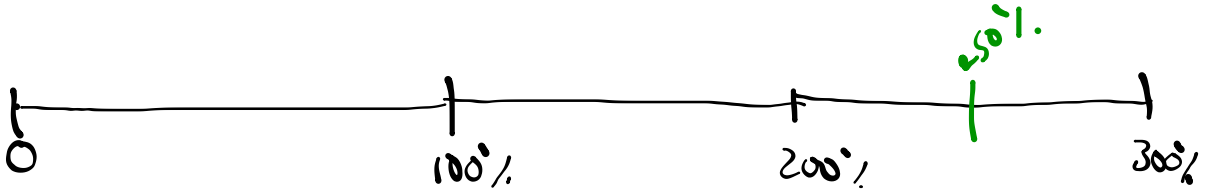
No calculators
Show all work

No #line or diagrams just show the math

5a) 120 % = 1.2



5b) 250% = 2.5



5d) 0.3 % = 0.003