Review – Percents

Name:_____

7th Grade Math

1. Fill in the table below...

Fraction	Decimal	Percent
$\frac{3}{5}$	0.6	60%
$\frac{25}{100} = \boxed{\frac{1}{4}}$	0.25	25%
$\frac{1}{8}$	0.125	12.5%
$1\frac{35}{100} = \boxed{1\frac{7}{20}}$	1.35	135%
$5\frac{5}{10} = \boxed{5\frac{1}{2}}$	5.5	550%

Conversions

2. Convert to a decimal:
   a. 40% → 0.4
   b. 30.5% → 0.305
   c. 43% → .43

3. Convert to a percent:
   a. 0.035 → 3.5%
   b. 0.46 → 46%
   c. 1.25 → 125%

4. Convert to a percentage:
   a. $\frac{53}{80}$ → 0.6625 → 66.25%
   b. $\frac{12}{50}$ → .24 → 24%
   c. $\frac{7}{11}$ → $0.\overline{63}$ → $63.\overline{63}\%$

5. Solving Percent Problems.

a. How much is 45% of 70?

$.45 \cdot 70$

31.5

b. 67% of 20 is how much?

$.67 \cdot 20 = x$

$13.4 = x$

c. What percent of 45 is 5?

$\frac{x \cdot 45}{45} = \frac{5}{45}$

$x = 0.\overline{1} = 11.\overline{1}\%$

d. 20 is what percent of 105?

$\frac{20}{105} = \frac{x \cdot 105}{105}$

$0.19 = x$

$x = 19\%$

e. 8 is 50% of what number?

$\frac{8}{.5} = \frac{.5 \cdot x}{.5}$

$16 = x$

f. 90% of what number is 6.5?

$\frac{.9 \cdot x}{.9} = \frac{6.5}{.9}$

$x = 7.\overline{2}$

6. Calculate the percent increase or decrease.

a. 24 to 20

$\frac{4}{24} = 0.1\overline{6} = 16.\overline{6}\%$ decrease

b. 56 to 78

$\frac{22}{56} = .39 = 39\%$ increase

c. 100 to 50

$\frac{50}{100} = 0.5 = 50\%$ decrease

d. 20 to 60

$\frac{40}{20} = 2 = 200\%$ increase

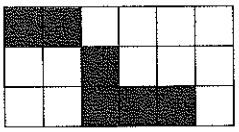
7. Jessica had $500 in her savings account last month. This month, she has $530. What is the percent increase?

$\frac{30}{500} = 0.06 = 6\%$ increase

8. If you score 64 out of 80 points on a test, what will your score as a percent be?

$\frac{64}{80} = 0.8 = 80\%$

9. What percent is represented by the shaded portion of the grid?



$\frac{6}{18} = 0.33\overline{3} = 33.3\overline{3}\%$

10. Fill in the table below to find the number of students who prefer each food if there were 60 people surveyed in all.

Favorite Food

Food	Percentage of Students	# of Students
Pizza	40%	24
Hamburgers	30%	18
Chicken	20%	12
Tacos	10%	6

.4 · 60
.3 · 60
.2 · 60
.1 · 60

11. A $30.00 shirt is marked-up 20%.

a. How much is the mark up?

.2 · 30 = $6

b. What is the retail price of the shirt?

1.2 · 30 = $36

12. A $92 video game is marked-up 40%.

a. How much is the mark-up?

.4 · 92 = $36.80

b. What is the retail price of the shirt?

1.4 · 92 = $128.80

13. A $46 sweatshirt is on sale for 30% off.

a. How much is the discount?

.3 · 46 = $13.80

b. What is the retail price of the shirt?

.7 · 46 = $32.20

14. A $54 pair of jeans is on the clearance rack and discounted 70%. If you have $15 do you have enough money to buy the jeans?

.3 · 54 = $16.20 No you do not have enough.

15. There is a sale at your favorite clothing store. Everything is 30% off! You pick out a shirt, a pair of jeans, and a belt. Your total is $126 before the sale. When you get to the register, the salesperson asks you if you'd like to open up a store credit card for an additional 10% off. You agree.
    a. What is your final cost (without tax)?

126 • .7
= 88.20

88.2 • .9
$ 79.38

    b. If the tax rate is 6%, what is your final cost including tax?

79.38 • 1.06 = $ 84.14

16. You go to Old Navy and want to buy a shirt that costs 24.99. The shirt is on sale for 30% off. You also have a coupon for an additional 10% off your purchase.
    a. What will the final sale price of the shirt be **before** tax?

24.99 • .7
17.49

17.49 • .9
$ 15.74

    b. What will the final sale price of the shirt be **after** tax is added?

15.74 • 1.06 = $ 16.68

17. Your next stop is American Eagle where you find a pair of jeans for 65.50. However, the jeans are on sale for 25% off. You also have a coupon for 20% off your purchase.
    a. What will the final sale price of the jeans be **before** tax?

65.50 • .75
49.13

49.13 • .8
$ 39.30

    b. What will the final sale price of the jeans be **after** tax is added?

39.30 • 1.06 = $ 41.66

18. Calculate the total balance for an initial investment of $4,000 that grows with simple interest at a rate of 7% for 15 years.

I = prt
I = 4000 • .07 • 15
I = $ 4200

4000 + 4200
$8200

23. Find the greatest possible error for each measurement below.

a. 14.2 ft

.05

b. 3.00 cm

.005

c. 9 lbs

.5

24. Find the percent error for each measurement below.

a. 0.0045 g

$\frac{.00005}{.0045} = .01$

$= 1.1\%$

b. 13.11 m

$\frac{.005}{13.11} = .00038$

$.04\%$

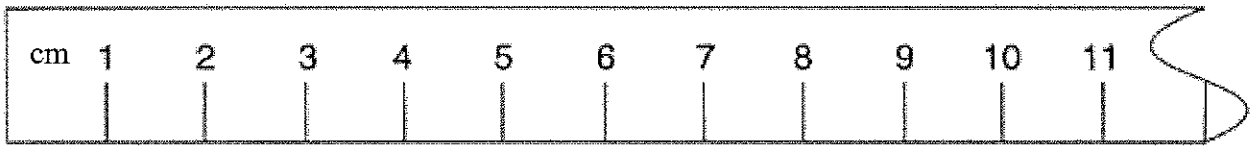
c. 4 in

$\frac{.5}{4} = .125$

$= 12.5\%$

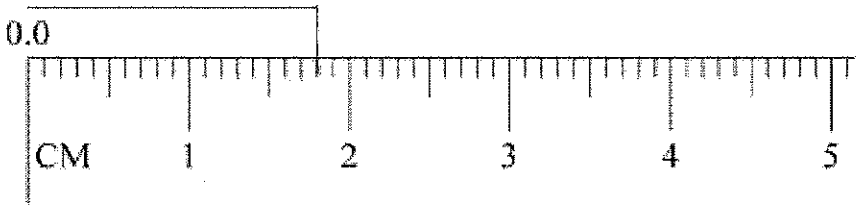
25. Find the percent error for each picture below.

a.



$\frac{.5}{6} = .08\overline{3} = 8.\overline{3}\%$

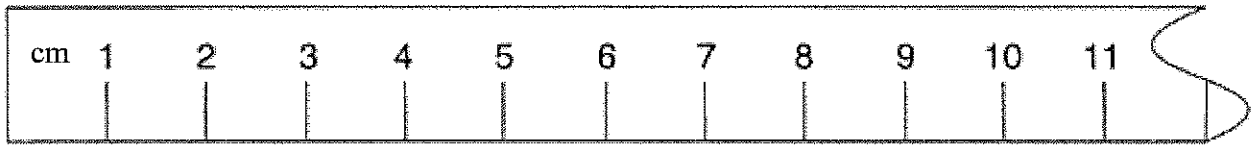
b.



$\frac{.05}{1.8} = .02\overline{7}$

$= 2.7\%$

c.



$\frac{.5}{11} = .0\overline{45} = 4.5\%$

19. Your social studies teacher weights grades according to the following categories...

homework	10%
Projects	60%
quizzes/tests	30%

If you are currently earning the following percents for each category, what would your final grade be?

homework	95%
Projects	85%
quizzes/tests	82%

$.95 \cdot .1 = .095$
$.85 \cdot .6 = .51$
$.82 \cdot .3 = .246$
$.851 = 85.1\%$ B

20. A teacher counts tests as 60% of a student's final grade and homework as 40%. If a student has an average of 90% for tests and 70% on homework, what percent will the student receive for their final grade?

T 60% $.6 \cdot .9 = .54$
HW 40% $.4 \cdot .7 = .28$
$.82 =$ 82% B⁻

21. In order to earn an A in math class, a student must have a 93% or better. The student has a 95% on tests and an 89% on homework. If the teacher counts tests as 70% of the grade, will the student earn an A?

T $.95 \cdot .7 = .665$
HW $.89 \cdot .3 = .267$
$.932 =$ 93.2% Yes the student will earn an A.

22. A college student earns an ~~A- in College Algebra (3 credits)~~, a ~~B+ in Writing (3 credits)~~, an ~~A in Humanities (2 credits)~~, an ~~A in Biology (3 credits)~~, a D+ in Organic Chemistry (4 credits).
(Remember an A = 4, A- = 3.7, B+ = 3.3, B = 3, B- = 2.7, C+ = 2.3, C = 2, etc...)
Find the student's GPA if the average is weighted based on credits.

C⁻ = 1.7
D⁺ = 1.3
D = 1
D⁻ = .7

$3.7 \cdot 3 = 11.1$
$3.3 \cdot 3 = 9.9$
$4 \cdot 2 = 8$
$4 \cdot 3 = 12$
$1.3 \cdot 4 = +5.2$
46.2

$\frac{46.2}{15} =$ 3.08 GPA

Answers:

1)	3/5	0.6	60%
	¼	0.25	25%
	1/8	0.125	12.5%
	1 7/20	1.35	135%
	5 ½	5.5	550%
2)	a. 0.4	b. 0.305	c. 0.43
3)	a. 3.5%	b. 46%	c. 125%
4)	a. 66.3%	b. 24%	c. 63.6%
5)	a. 31.5	b. 13.4	c. 11.1%
	d. 19%	e. 16	f. 7.2
6)	a. 16.7%D	b. 39.3% I	c. 50% D
	d. 200% I		
7)	6%		
8)	80%		
9)	33.3%		
10)	pizza = 24, hamburgers = 18, chicken = 12, tacos = 6		
11)	a. $6	b. $36	
12)	a. $36.80	b. 128.80	
13)	a. $13.80	b. $32.20	
14)	The jeans would cost $16.20 so NO you do not have enough money.		
15)	a. $79.38	b. $84.14	
16)	a. $15.74	b. $16.68	
17)	a. $39.30	b. $41.66	
18)	$8200		
19)	85.1% B		
20)	82% B-		
21)	93.2% yes		
22)	3.08 GPA		
23)	a. 0.05	b. ~~05~~ .005	c. 0.5
24)	a. 1.1%	b. 0.038%	c. 12.5%
25)	a. 8.3%	b. 2.7%	c. 4.5%