



Warm Up Grade 8

Date: Oct 15

Quiz tomorrow



1) Use mental math to calculate the following (show work)

a) 25 % of 84 = 21
(going on in)
 $84 \div 4$

b) 30% of 124
 $10\% \text{ of } 124 = 12.4$
 $\times 3$
 $30\% \text{ of } 124 = 37.2$

c) 15% of 60
 $10\% \text{ of } 60 = 6$
 $5\% \text{ of } 60 = 3$
 $15\% \text{ of } 60 = 9$

2) Estimate the following (show work...what did you use)

a) 11% of 260
 $\approx 10\% \text{ of } 260 = 26$

b) 68% of 80
 $70\% \text{ of } 80 = 56$
 $10\% \text{ of } 80 = 8$

3)

%	Decimal	Fraction
40%	0.40	$\frac{2}{5} \xrightarrow{\times 20} \frac{40}{100}$
34%	0.34	$\frac{34}{100} \xrightarrow{\div 2} \frac{17}{50}$
19%	0.19	$\frac{19}{100}$
71%	0.71	$\frac{71}{100}$



Warm Up Grade 8
Date: Oct 15
Quiz tomorrow



1) Use mental math to calculate the following (show work)

a) 25 % of 84 = 21
(thinking)
 $84 \div 4$

b) 30% of 124
 $10\% \text{ of } 124 = 12.4$
 $\times 3$
 $30\% \text{ of } 124 = 37.2$

c) 15% of 60
 $10\% \text{ of } 60 = 6$
 $5\% \text{ of } 60 = 3$
 $15\% \text{ of } 60 = 9$

2) Estimate the following (show work...what did you use)

a) 11% of 260
 $\approx 10\% \text{ of } 260 = 26$

b) 68% of 80
 $\approx 70\% \text{ of } 80$
 $10\% \text{ of } 80 = 8$
 $\times 7$
 $70\% \text{ of } 80 = 56$

3)


%	Decimal	Fraction
40 %	$40 \div 100 = 0.4$	$\frac{40}{100} = \frac{2}{5}$
34 %	0.34	$\frac{34}{100} = \frac{17}{50}$
19 %	$19 \div 100 = 0.19$	$\frac{19}{100}$
71 %	0.71	$\frac{71}{100}$

% of Number

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

$$25\% = \frac{25}{100} = \frac{1}{4}$$

$$50\% = \frac{50}{100} = \frac{1}{2}$$

* **10 %** of number is like **\div by 10**  (More decimal place Back)

Ex) 10% of $70 = 7$

\rightarrow Can use 10% to get multiples ($10\%, 20\%, 30\% \dots$)

$$20\% \text{ of } 90$$

$$\underset{\times 2}{10\% \text{ of } 90} = \underset{\times 2}{9}$$

$$20\% \text{ of } 90 = 18$$

* **5 %** Find **10% of #** then **\div by 2** to find **5 %**

* **25 %** of Number is like **\div by 4**

Ex) 25% of $44 = 11$

(like $44 \div 4 = 11$ your thinking)

\rightarrow can use for $25\%, 50\%, 75\%, 100\% \dots$

Ex 75% of 84

$$\underset{\times 3}{25\% \text{ of } 84} = \underset{\times 3}{21}$$

$$75\% \text{ of } 84 = \boxed{63}$$

* **50 %** of Number is like **\div by 2**

Ex) 50% of $20 = 10$

(half of 20)

use $50\%, 100\%, 150\%, 200\% \dots$

* **1 %** of Number is like **\div by 100**  (More decimal place Back)

1% of $123.7 = 1.237$

Use this for multiples of $1\%, 2\%, 3\%, 4\% \dots$

* **15 %** \rightarrow Find 10% of #
Find 5% of # } then add answers for **15 %**

Grade 8 Percent of a Number day 2 Mentally

Show work to calculate the following:

- (a) 10 % of 90 = 9

$\frac{90}{10}$
- (b) 50 % of 42 = 21

$42 \div 2$
- (c) 25 % of 60 = 15

$\frac{60}{4}$

$\times \begin{cases} 10\% \text{ of } 66 = 6.6 \\ 20\% \text{ of } 66 = 13.2 \end{cases} \times 2$
- (e) 75 % of 24 = 18

$\times 3$ $25\% \text{ of } 24 = 6$ $\times 3$
75% of 24 = 18
- (f) 15% of 80 = 12

$\frac{10\% \text{ of } 80 = 8}{5\% \text{ of } 80 = 4}$
15% of 80 $8 + 4 = 12$
- (g) 1 % of 38 = 0.38

$\frac{38}{100} = 0.38$

$\frac{75}{10} = 7.5$ = 7.5
- (i) 11% of 120 = 13.2

$\frac{10\% \text{ of } 120 = 12}{1\% \text{ of } 120 = 1.2}$
11% of 120 = 13.2
- (j) 30% of 15 = 4.5

$\times 3$ $10\% \text{ of } 15 = 1.5$ $\times 3$
30% of 15 = 4.5
- (k) 2% of 400 = 8

$\times 2$ $1\% \text{ of } 400 = 4$ $\times 2$
2% of 400 = 8

$\times 2$ $10\% \text{ of } 150 = 15$
5% of 150 = 7.5
 $15 \div 2 = 7.5$

Use estimation to estimate the following

1) 9% of 160

$\approx 10\%$ of 160

$160 \div 10 = 16$

≈ 16

2) 24% of 80

$\approx 25\%$ of 80

$80 \div 4 = 20$

≈ 20

3) 51% of 40

$\approx 50\%$ of 40

$40 \div 2 = 20$

≈ 20

4) 73% of 63

$\approx 70\%$ of 63

10% of 63 = 6.3

$\times 7$

70% of 63 = 44.1

5) 11% of 110

$\approx 10\%$ of 110

$110 \div 10 = 11$

≈ 11

6) 29% of 60

$\approx 30\%$ of 60

10% of 60 = 6

$\times 3$

30% of 60 = 18

7) 42% of 20

$\approx 40\%$ of 20

10% of 20 = 2

$\times 4$

40% of 20 = 8

8) 60% of 50

$\approx 60\%$ of 50

10% of 50 = 6

$\times 6$

60% of 50 = 36

9) 25% of 20

$\approx 25\%$ of 20

$20 \div 4 = 5$

≈ 5

10) 50% of 300

$\approx 50\%$ of 300

$300 \div 2 = 150$

≈ 150

11) 50% of 60

$\approx 50\%$ of 60

$60 \div 2 = 30$

≈ 30

12) 75% of 120

$\approx 25\%$ of 120

$120 \div 4 = 30$

$\approx 75\%$ of 120 = 3 \times 30

$\approx 75\%$ of 120 = 90

13) 10% of 440

$\approx 10\%$ of 440

$440 \div 10 = 44$

≈ 44

14) 20% of 500

$\approx 20\%$ of 500

10% of 500 = 50

$\times 2$

20% of 500 = 100

15) 30% of 180

$\approx 30\%$ of 180

10% of 180 = 18

$\times 3$

30% of 180 = 54

16) 40% of 160

$\approx 40\%$ of 160

10% of 160 = 16

$\times 4$

40% of 160 = 64

17) At the local music concert 300 people attended. 40% of the people were adults and the rest were students.

A) How many adults attended?

B) How many students attended

a)

Adults = 40% of Total

= 40% of 300

10% of 300 = 30

$\times 4$

40% of 300 = 120

120 adults attend the concert

b) $300 - 120 = 180$

180 students attend the concert

Finding the Percent of a Number

With calculator

What does the term "of" mean in math?

"of" tells you to multiply.

To find the percent of a number, you change the percent to a decimal, then multiply.

Examples:

22% of 98

~~0.22 x 98~~

~~21.56~~

$(0.22) \times 98 = 21.56$

a) 78% of 346

0.78×346

269.88

$\downarrow \div 100$

$(0.78) \times 346 = 269.88$

b) 12.5% of 84

0.125×84

10.5

$\downarrow \div 100$

$(0.125) \times 84 = 10.5$

c) 6% of 820

0.06×820

49.2

$\downarrow \div 100$

$(0.06) \times 820 = 49.2$

d) 146% of 90

1.46×90

131.4

$\downarrow \div 100$

$(1.46) \times 90 = 131.4$

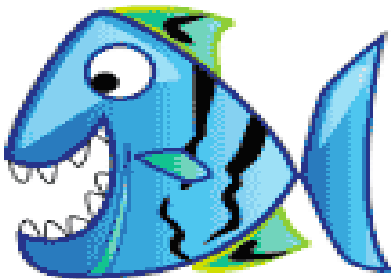
Percentage of a Number

Name: _____ Score: _____

Calculate and round off to the nearest hundredth.

27% of 120

32% of 163



2.1% of 251

16% of 29

76% of 322

8.5% of 145

31% of 199

66% of 188

28% of 52

4.6% of 212

113% of 62

2.99% of 25

27% of 48

8.2% of 45

71% of 76

7.9% of 35

21% of 225

38% of 42

7.1% of 588

51% of 66

Name: _____ Date: _____

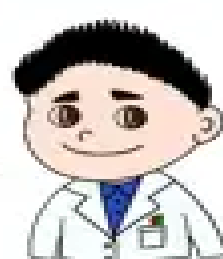
Percentage of Number Worksheet

Calculate the percentages.

1 a. 150% of 50	1 b. 150% of 90
2 a. 100% of 60	2 b. 50% of 100
3 a. 350% of 70	3 b. 150% of 70
4 a. 350% of 50	4 b. 350% of 90
5 a. 450% of 100	5 b. 200% of 30
6 a. 250% of 50	6 b. 350% of 40
7 a. 350% of 80	7 b. 150% of 100
8 a. 400% of 80	8 b. 300% of 50

Name: _____

Percentage of a Number



Find the percentage of each number.

1. 20% of 60 = _____

11. 35% of 40 = _____

2. 30% of 90 = _____

12. 55% of 20 = _____

3. 15% of 60 = _____

13. 40% of 90 = _____

4. 40% of 30 = _____

14. 30% of 80 = _____

5. 24% of 50 = _____

15. 40% of 50 = _____

6. 10% of 100 = _____

16. 25% of 20 = _____

7. 50% of 50 = _____

17. 20% of 50 = _____

8. 10% of 60 = _____

18. 80% of 95 = _____

9. 77% of 100 = _____

19. 55% of 40 = _____

10. 45% of 60 = _____

20. 12% of 400 = _____



What Percent? - Whole Percents

Name: _____ Score: _____

Calculate the percent numbers.

20 out of 100

15 out of 30



25 out of 100

25 out of 125

25 out of 250

35 out of 140

15 out of 300

14 out of 280

17 out of 68

20 out of 20

55 out of 220

21 out of 300

25 out of 500

18 out of 36

72 out of 200

99 out of 198

45 out of 225

75 out of 500

60 out of 400

16 out of 200