



Warm Up Grade 8
Feb. 28, 2017
No Calculators



The grade 8 class put on a play on for the school on Wednesday and Thursday. If 80 people showed up for the play on Wednesday, how many showed up on Thursday if the attendance was 120% of Wednesday's attendance?

120% of Wed

120% of 80

$$100\% \text{ of } 80 = 80$$

$$10\% \text{ of } 80 = 8$$

$\times 2$ $\times 2$

$$20\% \text{ of } 80 = 16$$

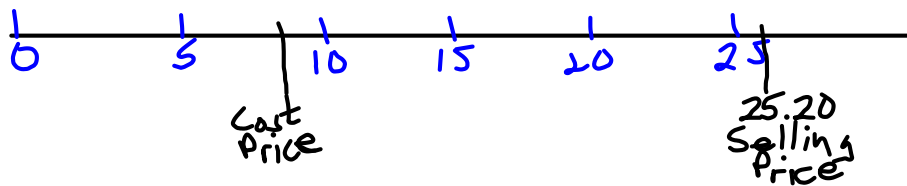
$$120\% \text{ of } 80 = 80 + 16$$
$$= \boxed{96}$$

96 people attended on Thursday

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	Percent	Decimal	
6.			
a) 1.7	170%	$\frac{170}{100}$	$\frac{17}{10}$
b) 3.3	330%	$\frac{330}{100}$	$\frac{33}{10}$
c) 0.003	0.3%	$\frac{0.3}{100}$	$\frac{3}{1000}$
d) 0.0056	0.56%	$\frac{0.56}{100}$	$\frac{56}{10000}$

7. 280% of 9
 2.8×9
 25.20 - Selling Price



8. Giving 110% means putting more than expected into something.
 → Doing what is expected and more

9. a) 2 examples > 100%

→ Everything correct on a test plus the bonus
 → The selling price of an item
 selling price 250% of cost price

b) < 1%

→ an increase in the dollar 0.25%
 → Chance of winning a prize if
 1000 tickets are sold $\frac{1}{1000} = 0.001$
 or 0.1%

10. (a) $1/3 = 0.333\dots$ or 33.3%

$$2/3 = 0.666\dots \text{ or } 66.7\%$$

$$3/3 = 1.00 \text{ or } 100\%$$

$$4/3 = 1.333\dots \text{ or } 133.3\%$$

$$5/3 = 1.666\dots \text{ or } 166.7\%$$

$$6/3 = 2 \text{ or } 200\%$$

(b) Pattern

(c) $7/3 = 2.333\dots$ or 233.3%

$$8/3 = 2.666\dots \text{ or } 266.7\%$$

$$9/3 = 3 \text{ or } 300\%$$

$$10/3 = 3.333\dots \text{ or } 333.3\%$$

$$11/3 = 3.666\dots \text{ or } 366.7\%$$

$$12/3 = 4 \text{ or } 400\%$$

12. 0.8% of runners completed in 2 h 15 min

0.8% of 618

$$0.008 \times 618$$

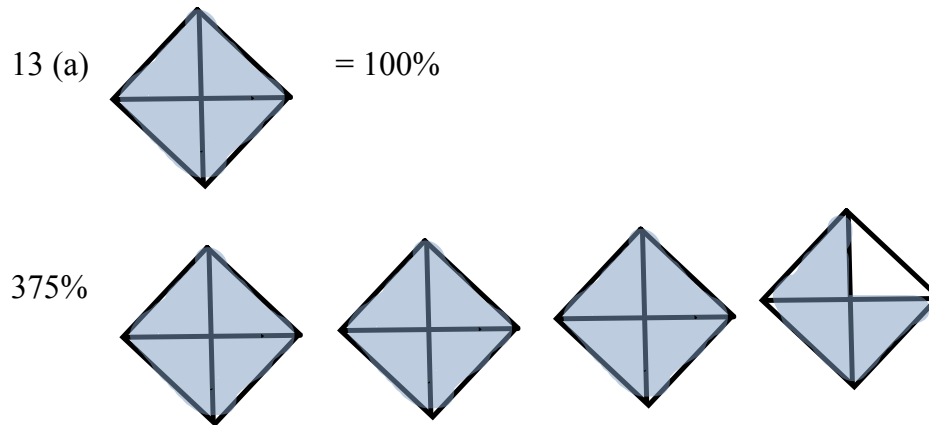
4.994 or 5 runners completed the run in the time

(b) Estimate

1% of 600

6

estimate is close



14. (a) Juan

5 % of 2600

$$0.05 \times 2600$$

130

$$\text{New Population} = 2600 + 130 = 2730$$

15% of 2730
of new population

$$0.15 \times 2730$$

409.5 (or 410)

$$\text{Final Population} = 2730 + 410 = 3140$$

(b) Jeremy

20 % of 2600

$$0.2 \times 2600$$

520

$$\text{Final Population} = 2600 + 520 = 3120$$

(c) The answers are not the same. Who is Correct?

Juan used the correct method

15. 140 % of attendance on Friday
 1.40×120
 168 people attended on Saturday

- (b) Estimate
 $100\% + 50\%$
 $120 + 60$
 180

16. (a) 0.75 % of 1888 population
 0.75 % of 2000

Estimate 1 % of 2000
 $(2000 \div 100)$
 20

- (b) 0.75% of 2000
 0.0075×2000
 15

- (c) Decrease in Population 2000 - 15
 1985

17. Number of girls who signed up
 195 % of boys
 1.95×20
 39 girls signed up

26 attended auditions
 $\frac{26}{39} = 0.666\dots$
 $= 66.7\%$ of the signed up attended

Must StudyPercent Problems

There are 3 types of percent problems:

- finding the percent

ex. 15 out of 30

$$\frac{15}{30} = 0.5 = 50\%$$

- finding the percent of a number

ex. 45% of 360

change to a decimal and multiply

$$0.45 \times 360 = 162$$

- finding the number from a percent

ex. 60% of a number is 72

- third type: **Must rearrange**

60% of a number is 72

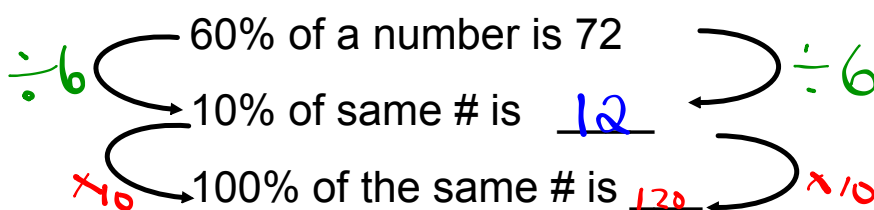
Let n = the number

$$0.6 \times n = 72$$

$$\frac{0.6 n}{0.6} = \frac{72}{0.6}$$

$$n = 120$$

or



$$n + 7 = 50 - 7$$

$$n = 43$$

$$\frac{\cancel{3}n}{\cancel{3}} = \frac{21}{3}$$

$$n = 7$$

$$\cancel{2}n + \cancel{5} = \underbrace{13}_{-5}$$

$$\frac{2n}{2} = \frac{8}{2}$$

$$n = 4$$

Examples:



1. Grady is 13 years old and 155 cm tall. His height at this age is about 90% of his final adult height. How tall would you expect Grady's adult height to be?

90% of adult height is 155 cm
 how do you find h?

$\div 9$
 10% of Adult height = 17.2 cm
 $\times 10$

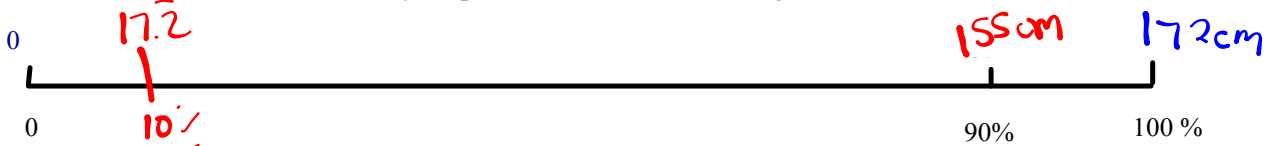
$\div 9$
 100% of Adult height = 172 cm
 $\times 10$

or

90% of Adult = 155
 $0.9 \times A = 155$
 $\frac{0.9A}{0.9} = \frac{155}{0.9}$
 $A = 172 \text{ cm}$

Showing a number line:

It doesn't matter which method you prefer to use, both will give the same answer.



2. (a) 70% of a number is 63

$\div 7$
 70% of $n = 63$
 10% of $n = 9$
 $\times 10$
 100% of $n = 90$
 $n = 90$

70% of $n = 63$
 change % to decimal
 $0.70 n = 63$
 $\frac{0.70 n}{0.70} = \frac{63}{0.70}$
 $n = 90$



(b) 175% of a number is 105 (Will the number be more or less than 105?)

$\div 5$
 175% of $n = 105$
 $\div 5$
 35% of $n = 21$
 $\div 7$
 5% of $n = 3$
 $\times 20$
 100% of $n = 60$

175% of $n = 105$
 \downarrow
 $1.75 \times n = 105$
 $\frac{1.75 \times n}{1.75} = \frac{105}{1.75}$
 $n = 60$

divide calculator

3. (a) A length of 30 cm increased by 40%. What is the new length?
 (b) A mass of 50 g decreased by 17%. What is the new mass?



(a) Amount of increase = 40% of 30
 = 0.4 of 30
 = 12

mentally

10% of 30 = 3
 4 x 3 = 12
 40% of 30 = 12

New length = 12 + 30
 = 42

(b) Amount decreased
 17% of 50
 = 0.17 x 50
 = 8.5 g

New Mass = 50g - 8.5g
 = 41.5g

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STOP