Warm Up Grade 8

Feb. 20, 2020

can use a calculator

1) Jim and Karen are competing for first place in their grade 8 class. Karen receives 23.5 out of 25 on her math test and Jim receives 29.5 out of 32/ Who received the higher mark?

Karen $\frac{23.5}{25}$ = 94%

Top ÷ bott = decimal x 100 = %

Jim $\frac{29.5}{32} \approx 92.1\%$

Karen has a larger %

2) The cost to make a pen is $0.15. The company sells the pen for 450% of its cost to make. How much profit do they make off of 1 pen?

450% of cost = sell

change to decimal: 4.50 x $0.15 = 0.675

$0.68

You sell the pen for $0.68.

3) 26% of a number is 93.6, what is that number?

$26\% \; n = 93.6$

$0.26n = 93.6$

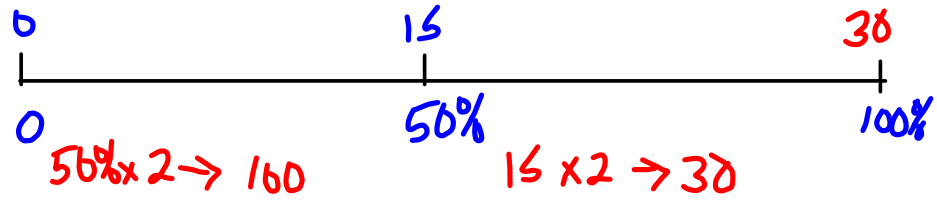
$\frac{0.26n}{0.26} = \frac{93.6}{0.26}$

$n = 360$

pg 252

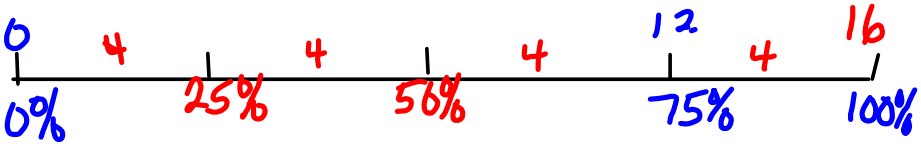
100% of n = 30

30) 50% of a number is 15 (×2)



50% × 2 → 100 15 × 2 → 30

b) 75% of a number is 12



75% of — is 12
25% of — is 12 ÷ 3 = 4
100% of — is 4 × 4 → 16

c) 30% of a number is 60

100% → 20 × 10 = 200

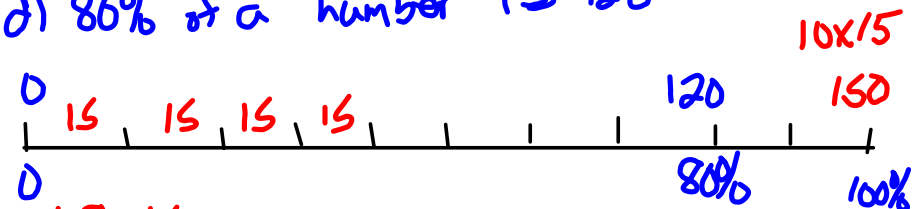
30% of — = 60
10% of — = 60 ÷ 3
= 20
100% of — = 20 × 10
= 200

$0.3 \times n = 60$

$\frac{0.3 \times n}{0.3} = \frac{60}{0.3}$

$n = 200$

d) 80% of a number is 120



120 ÷ 8 = 15

×8 (80% of — = 120
÷8 (10% of — = 120 ÷ 8
= 15
×10 (100% of — = 15 × 10
= 150

$0.8 \times n = 120$

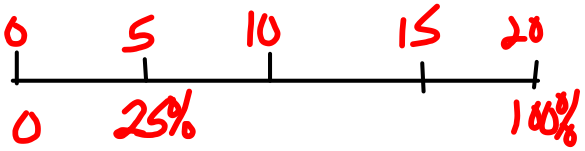
$\frac{0.8n}{0.8} = \frac{120}{0.8}$

$n = 150$

$$\frac{0.5n}{0.5} = \frac{15}{0.5}$$

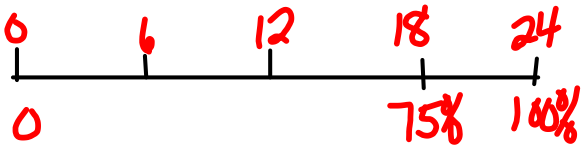
$$n = 30$$

4a) 25% of a number is 5



25% of _ = 5
×4 ×4
100% of _ = 20

b) 75% of a number is 18



75% of _ = 18
25% of _ = 18 ÷ 3
= 6
100% of _ = 6 × 4
= 24

$0.75 \times n = 18$

$\frac{0.75n}{0.75} = \frac{18}{0.75}$

$= 24$

c) 4% of a number is 32

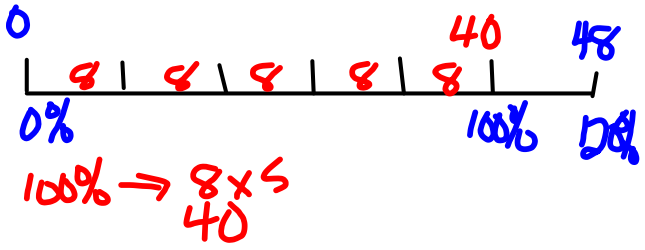
$0.04 \times n = 32$

$\frac{0.04n}{0.04} = \frac{32}{0.04}$

$n = 800$

4% of _ = 32
1% of _ = 32 ÷ 4
= 8
100% of _ = 8 × 100
800

d) 120% of a number is 48



100% → 8 × 5
40

$1.2 \times n = 48$

$\frac{1.2n}{1.2} = \frac{48}{1.2}$

$n = 40$

Study

Finding the Percent Increase or Percent Decrease

Difference = Big - Small means Big # - Small #

$$\frac{\text{Difference}}{\text{Original}} \times 100$$

******** Important

Percent Increase = $\frac{\text{Amount of Increase}}{\text{Original Amount}} \times 100\%$ (Amount of Increase = New Price - Original Price)

Percent Decrease = $\frac{\text{Amount of Decrease}}{\text{Original Amount}} \times 100\%$ (Amount of Decrease = Original Price - NewPrice)

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Example 4

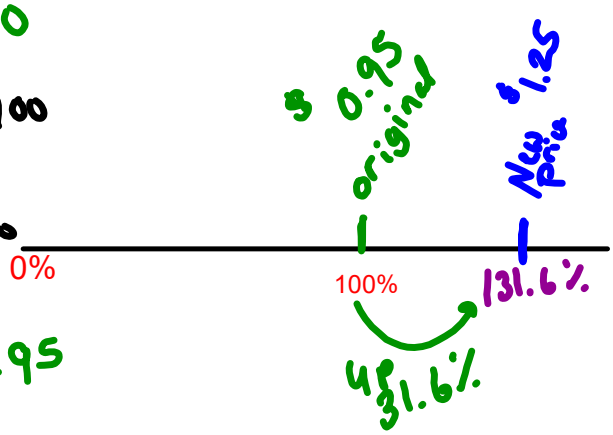
(a) The price of a carton of milk in the school cafeteria increased from \$0.95 to \$1.25. What was the percent increase in price?

(b) The price of a green salad decreased from \$2.50 to \$1.95. What was the percent decrease in price?

solution

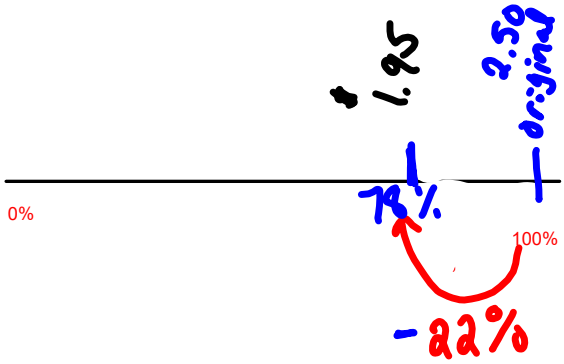
(a) ~~Amount of Increase~~ Difference = Big - Small
= \$1.25 − \$0.95
= \$0.30

Percent Increase = $\frac{\text{Diff}}{\text{orig}} \times 100$
= $\frac{\$0.30}{\$0.95} \times 100$ (divide)
= 0.31578 × 100
≈ 31.6%



(b) ~~Amount of decrease~~ Difference = Big - Small
= \$2.50 − \$1.95
= \$0.55

Percent Decrease = $\frac{\text{Diff}}{\text{orig}} \times 100$
= $\frac{\$0.55}{\$2.50} \times 100$
= 0.22 × 100
= 22%



Class / Homework

pg. 252 - 254

5, #6, #7, #8, #9, #[redacted]

Diff = Big - Small

$\% \text{ inc} = \frac{\text{Diff}}{\text{orig}} \times 100$

7) 15% is 12.5g

15% of n = 12.5

Eddy!

a) 5cm (orig) → 10cm

Diff = Big - Small

= 10cm - 5cm

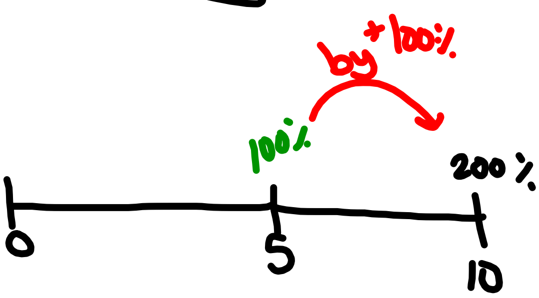
Diff = 5cm

$\% \text{ in} = \frac{\text{Diff}}{\text{orig}} \times 100$

$= \frac{5cm}{5cm} \times 100$

$= 1 \times 100$

= 100 % increase



7. a) 15% is 125

15% of n = 125

$0.15n = 125$

$\frac{0.15n}{0.15} = \frac{125}{0.15}$

$n = 833.3$

b) 9% of ___ is 45 ÷9

÷9

1% of ___ is 5

100% of ___ is 5x100

500

number is 500

$0.09n = 45$

$\frac{0.09n}{0.09} = \frac{45}{0.09}$

$n =$

c) 0.8% of ___ is 12

$0.008 \times n = 12$

$\frac{0.008n}{0.008} = \frac{12}{0.008}$

$n = 1500$

10. 2001 → 12% less miners

12% of miners in 1986
12% of 193 000
0.12 x 193 000
23160 → fewer miners

So in 2001
193 000 − 23 160
169 840 miners in 2001

12. Jemma

Week 1 Increase
15% of 1.5
0.15 x 1.5
0.225

Mass after week 1 → 1.5 + 0.225
1.725

Week 2 Increase
15% of 1.725
0.15 x 1.725
0.25875

Jemma's Mass-Week 2
1.725 + 0.25875
1.98375 kg

George
30% increase in 2 weeks
30% of 1.5
= 0.3 x 1.5
= 0.45

Total Mass 1.5 + 0.45
1.95 kg