Warm Up Grade 8

Feb. 14, 2018

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?

K
$\frac{23.5}{25}$ ← ÷ (Top / Bottom) Decimal = 0.94 = 94%

Jim $\frac{29.5}{32}$ ← ÷ = 0.92 = 92%
Decimal %

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?

Sell = 450% of its cost
= 450% X 0.15
↓
= 4.5 X 0.15
= 0.675
Selling ≈ 0.68

Profit = Sell − Cost
= 0.68 − 0.15
= 0.53

$0.53 is the profit on each pen.

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

26% of n = 93.6
↓
0.26 X n = 93.6

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

n = 360

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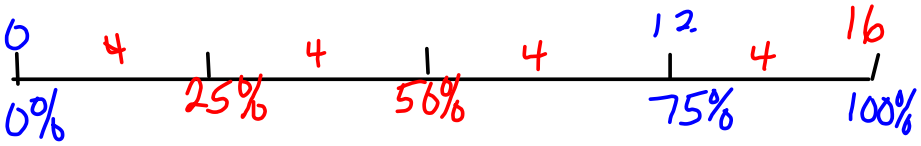
3a) 50% of a number is 15

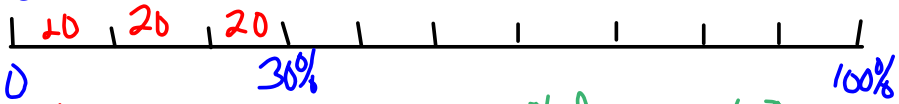
50% x 2 → 100 15 x 2 → 30

b) 75% of a number is 12



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

c) 30% of a number is 60



100% → 20 x 10 = 200

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

0.3 x 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

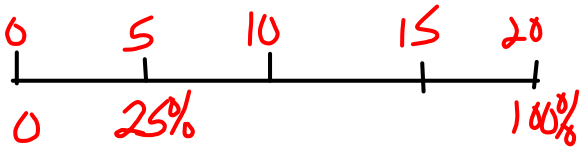
0.8 x n = 120

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

n = 150

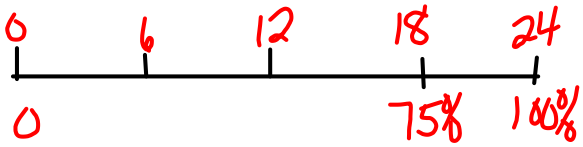
80% of — = 120
10% of — = 120 ÷ 8
= 15
100% of — = 15 x 10
= 150

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

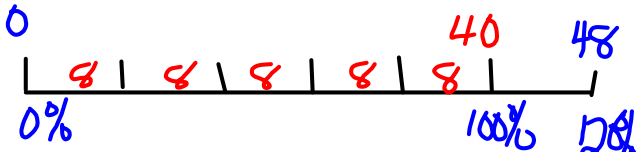
$0.75 \times n = 18$
$\frac{0.75n}{0.75} = \frac{18}{0.75}$
$= 24$

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

$1.2 \times n = 48$
$\frac{1.2n}{1.2} = \frac{48}{1.2}$
$n = 40$

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 5 x 100

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 × 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 × 1.5
0.225

Mass after week 1 → 1.5 + 0.225
1.725

Week 2 Increase
15% of 1.725
0.15 × 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 × 1.5
= 0.45

Total mass 1.5 + 0.45
1.95 kg

Finding the Percent Increase or Percent Decrease

Difference = Big # − Small #

$$\%\ \text{increase or decrease} = \frac{\text{Difference}}{\text{Original}} \times 100$$

Original ← 1st # given in word problem

******** Important

Percent Increase = Amount of Increase x 100% (Amount of Increase = New Price - Original Price)
Original Amount

Percent Decrease = Amount of Decrease x 100% (Amount of Decrease = Original Price - NewPrice)
Original Amount

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Example 4

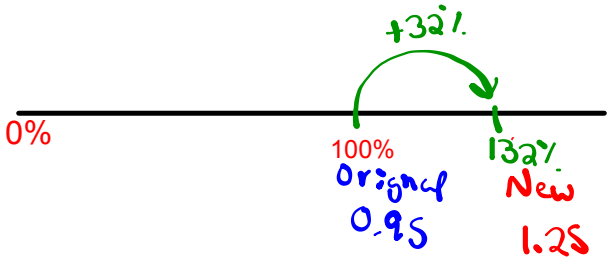
(a) The price of a carton of milk in the school cafeteria increased from $0.95 to $1.25. What was the percent increase in price? (Increase) ORIGINAL

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

solution

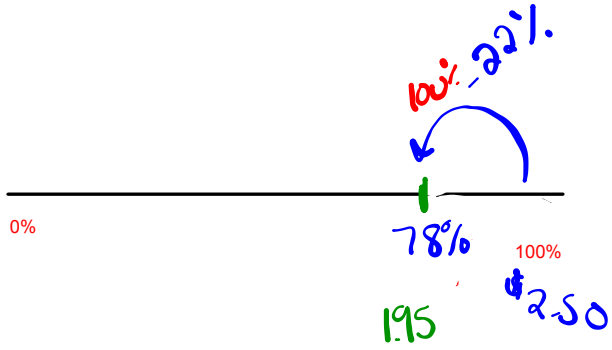
(a) Amount of Increase = Difference = Big - Small = 1.25 - 0.95 = 0.30

Percent Increase = % = Diff / orig x 100 = 0.30 / 0.95 x 100 (Divide first) = 0.315 x 100 = 31.5 % ≈ 32%



(b) Amount of decrease = Diff = Big - Small = 2.50 - 1.95 = 0.55

Percent Decrease = % Dec = (Diff / orig) x 100 = (0.55 / 2.50) x 100 = 0.22 x 100 = 22 %



Class / Homework

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5, #6, #8, #9, #11, #13, #15, [redacted]

tricky (Remember question w Juan

c) # of people that come = 24% of pop

= #

New Pop = Pop + #

b)

5a) or 5 → 10

Diff = 10 − 5

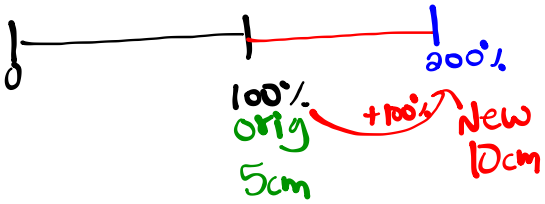
= 5

% inc = Diff / org × 100

= 5cm / 5cm × 100

= 1 × 100

= 100 %

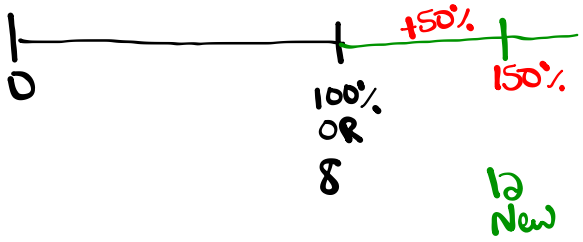


5 b) Diff = 12 − 8 = 4

$\frac{4}{8} \times 100$

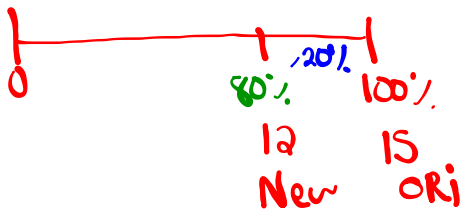
0.50 x100

%inc = 50%



6) orig
15 → 12

Diff = 15 - 12 = 3



% dec = $\frac{3}{15} \times 100$

$= 0.20 \times 100$

$= 20\%$

Hi