Warm Up Grade 8

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?

J
29.5 / 32
0.9218
92%

K
23.5 / 25
0.94
94%

Karen recieves a higher mark.

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 Cost
Sell = 4.50 × $0.15
= 0.675
Sell ≈ 0.68

Profit = Sell − Cost
= 0.68 − 0.15
= $0.53

The profit is $0.53.

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

26% of n = 93.6
↓ change % to decimal
0.26n = 93.6

0.26n = 93.6
÷0.26 ÷0.26

n = 360

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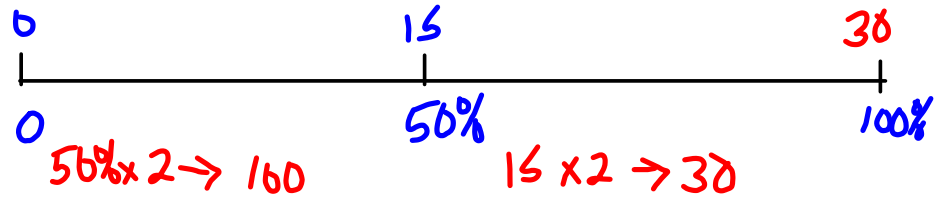
50% of n = 15
$\frac{0.50n}{0.50} = \frac{15}{0.5}$
n = 30

3a) 50% of a number is 15



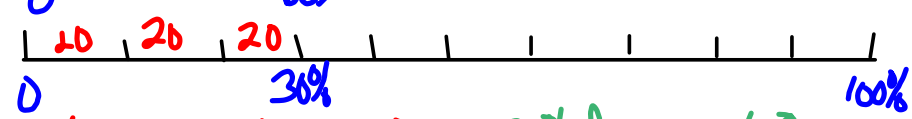
50% x 2 → 100 15 x 2 → 30

b) 75% of a number is 12

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

75% of n = 12
$\frac{0.75n}{0.75} = \frac{12}{0.75}$
n = 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

$0.3 \times n = 60$
$\frac{0.3n}{0.3} = \frac{60}{0.3}$
$n = 200$

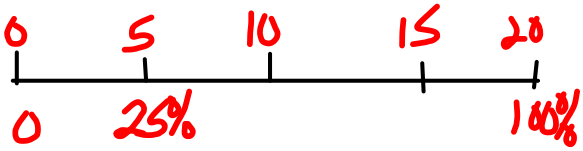
d) 80% of a number is 120

120 ÷ 8 = 15

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

$0.8 \times n = 120$
$\frac{0.8n}{0.8} = \frac{120}{0.8}$
$n = 150$

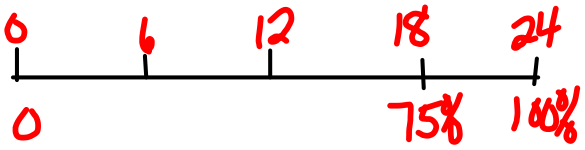
4a) 25% of a number is 5



25% of _ = 5
×4 ×4
100% of _ = 20

$0.25n = 5$
$\frac{0.25}{0.25}$ $\frac{5}{0.25}$
$n = 20$

b) 75% of a number is 18



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

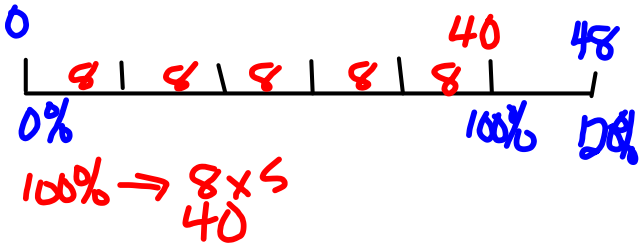
$0.75 \times n = 18$
$\frac{0.75n}{0.75} = \frac{18}{0.75}$
$= 24$

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 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

Finding the Percent Increase or Percent Decrease

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

Difference = Big − Small

******** 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

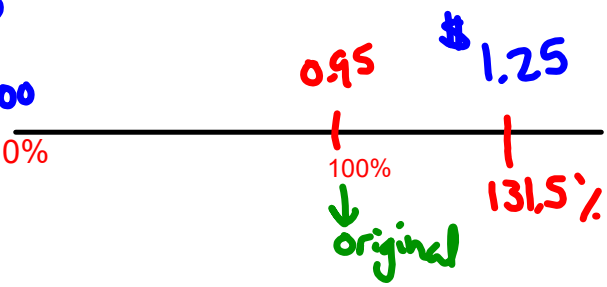
(a) Amount of Increase = Diff = Big - Small
= \$1.25 − \$0.95
= \$0.30

Percent Increase = $\frac{\text{Diff}}{\text{Orig}} \times 100$

$= \frac{0.30}{0.95} \times 100$

$= 0.315 \times 100$

$\approx 31.5\%$

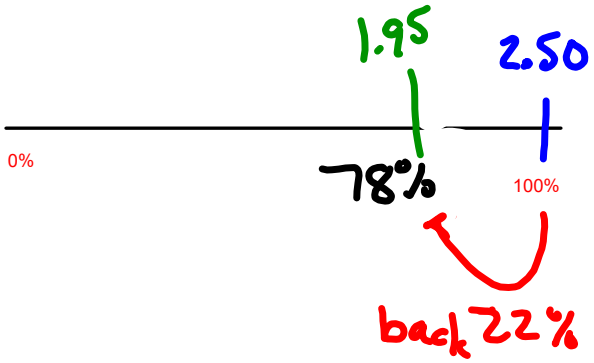


(b) Amount of decrease = Diff = right
= 2.50 - 1.95
= 0.55

Percent Decrease = $\frac{0.55}{2.50} \times 100$

0.22×100

22%



Class / Homework

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

"n"

Step 1

Diff = Big - Small

Step 2

$\frac{Diff}{Orig} \times 100$

÷ on cal x 100

____ %