Warm Up Grade 8

March ~~8~~ 14, 2016

Finding the Percent Increase or Percent Decrease

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

* remember the original is always the first one**

1. The width of the rectangle increased from 8 cm to 12 cm. Write the increase as a percent.

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

$$= \frac{12-8}{8} \times 100\ \%$$

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

$$= 0.5 \times 100\ \%$$

$$= 50\ \%$$

2. The volume of water in the tank decreased from 40 L to 32 L. Write the decrease as a percent.

$$\%\text{ dec} = \frac{\text{Diff}}{\text{Orig}} \times 100\ \%$$

$$= \frac{40-32}{40} \times 100\ \%$$

$$= \frac{8}{40} \times 100\ \%$$

$$= 0.2 \times 100\ \%$$

$$= 20\ \%$$

Finding the Percent Increase or Percent Decrease

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

******** 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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5. a) Amt of Inc = 10 − 5
= 5

$$\%\,Inc = \frac{Amt\ of\ Inc}{Orig\ Amt} \times 100\%$$

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

$$= 100\%$$

b) Amt of Inc = 12 − 8
= 4

$$\%\,Inc = \frac{Amt\ of\ Inc}{Orig\ Amt} \times 100\%$$

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

$$= 0.5 \times 100\%$$

$$= 50\%$$

6. Amt of Dec = 15 − 12
= 3

$$\%\,Dec = \frac{Amt\ of\ Dec}{Orig\ Amt} \times 100\%$$

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

$$= 0.2 \times 100\%$$

$$= 20\%$$

b) Amt of Dec = 200 − 150
= 50

$$Percent\ Dec = \frac{Amt\ of\ Dec}{Orig\ Amt} \times 100\%$$

$$= \frac{50}{200} \times 100\%$$

$$= 0.25 \times 100\%$$

$$= 25\%$$

8. a) Amt of Inc = 344 000 − 320 000
= 24 000

$$\%\,\text{Inc} = \frac{\text{Amt of Inc}}{\text{Orig Amt}} \times 100\%$$

$$= \frac{24\,000}{320\,000} \times 100\%$$

$$= 0.075 \times 100\%$$

$$= 7.5\%$$

b) Amt of Inc = 99 284 − 41 715
= 57 569

$$\%\,\text{Inc} = \frac{\text{Amt of Inc}}{\text{Orig Amt}} \times 100\%$$

$$= \frac{57\,569}{41\,715} \times 100\%$$

$$= 1.38 \times 100\%$$

$$= 138\%$$

9a) Amt of Dec = 109.9 − 104.9
= 5

$$\%\,\text{Dec} = \frac{\text{Amt Dec}}{\text{Orig Amt}} \times 100\%$$

$$= \frac{5}{109.9} \times 100\%$$

$$= 0.0455 \times 100\%$$

$$= 4.55\%$$

b) Amt of Dec = 17 − 10
= 7

$$\%\,\text{Dec} = \frac{\text{Amt of Dec}}{\text{Orig Amt}} = \frac{7}{17} \times 100\%$$

$$= 0.412 \times 100\%$$

$$= 41.2\%$$

10. 2001 → 12% less miners

12% of miners in 1986
12% of 193 000
0.12 × 193 000
23 160 → fewer miners

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

11. Amt of Dec $55 - 12$
43

$$\%\ \text{Dec} = \frac{\text{Amt of Dec}}{\text{Orig Amt}} \times 100\%$$
$$= \frac{43}{55} \times 100\%$$
$$= 0.782 \times 100\%$$
$$= 78.2\%\ \text{decrease}$$

12. Jemma

Week 1 Increase: 15% of 1.5
0.15×1.5
0.225

Mass after week 1 $\rightarrow 1.5 + 0.225$
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
$= 0.3 \times 1.5$
$= 0.45$

Total Mass $1.5 + 0.45$
$1.95\ kg$

(b)

13. a) 24% of 693 000 (Increase)

$0.24 \times 693\,000$

$166\,320$

Pop. in 2000: $693\,000 + 166\,320$

$859\,320$

b) 11% Increase in 2005

11% of 859 320

$0.11 \times 859\,320$

$94\,525.2$

Pop in 2005 →

$859\,320 + 94\,525$

$953\,845$

c) Amt of Inc $= 953\,845 - 693\,000$

$= 260\,845$

$$\%\ \text{Inc} = \frac{\text{Amt of Inc}}{\text{Orig Amt}} \times 100\%$$

$$= \frac{260\,845}{693\,000} \times 100\%$$

$$= 0.376 \times 100\%$$

$$= 37.6\%$$

d)

- 15. a) 150cm = 90% of adult height

90% of n = 150cm

$\frac{0.9 \times n}{0.9} = \frac{150}{0.9}$

$n = 166.7\text{cm}$

b) 98% of n = 176

$\frac{0.98 \times n}{0.98} = \frac{176}{0.98}$

$n = 179.6$

Class / Homework

Use

pg. 252 - 254

#14, #16, #17

#16 boy: 90% of adult height is 148 cm at age 13, find adult height?

Girl: 95% of adult height is 168 cm at age 13, find adult height?

Extra Practice 1: # 1 to #7

Use your notes

1 a b c

3 a b e

4 a g

5 a c e

6

7

Attachments

Extra Practice 1 Relating Fraction, decimal and percent.pdf