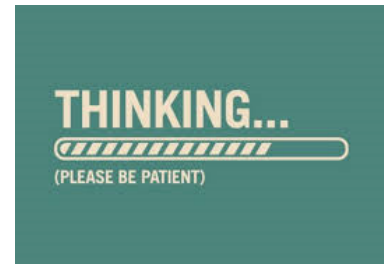




WARM UP GRADE 8

Feb. ~~21~~, 2018
23



The population of fish in a local pond were 125 000 in May 2000.
The population decreased by 43% due to a nearby oil leak. What is
the new population?

$$\begin{aligned} \text{Death of fish} &= 43\% \text{ of } 125\,000 \\ &= 0.43 \times 125\,000 \\ &= 53\,750 \end{aligned}$$

$$\begin{aligned} \text{New Pop} &= \text{Old} - \text{Death} \\ &= 125\,000 - 53\,750 \\ &= 71\,250 \end{aligned}$$

Sheet · Extra Practiced

$$1. \begin{array}{l} 275\% \\ 2.75 \end{array}$$

$$b) \begin{array}{l} 156\% \\ 1.56 \end{array}$$

$$c) \begin{array}{l} 320\% \\ 3.20 \end{array}$$

$$d) \begin{array}{l} 0.25\% \\ 0.0025 \end{array}$$

$$e) \begin{array}{l} 0.5\% \\ 0.005 \end{array}$$

$$f) \begin{array}{l} 0.58\% \\ 0.0058 \end{array}$$

$$2. a) \frac{6}{5} = \frac{120}{100} = 1.2 \xrightarrow{\times 100} 120\%$$

$$b) \frac{45}{40} = 1.125 \xrightarrow{\times 100} 112.5\%$$

$$c) \frac{15}{3} = \frac{5}{1} = \frac{500}{100} = 500\%$$

$$d) \frac{9}{6} \cdot \frac{3}{2} = \frac{150}{100} = 15\%$$

$$e) \frac{60}{25} = \frac{240}{100} = 240\%$$

$$f) \frac{9}{2} = \frac{450}{100} = 450\%$$

$$3a) 400\% \text{ of } 240$$

$$4 \times 240 \\ 960$$

$$40\% \text{ of } 240$$

$$0.4 \times 240 \\ 96$$

$$4\% \text{ of } 240$$

$$0.04 \times 240 \\ 9.6$$

$$0.4\% \text{ of } 240$$

$$0.004 \times 240 \\ 0.96$$

b) The numbers stay the same, but the position of the decimal moves.

$$c) 4000\% \text{ of } 240 \\ 9600$$

$$0.04\% \text{ of } 240 \\ 0.096$$

4. a) 120% of Thursday's attendance

$$120\% \text{ of } 160$$

$$1.2 \times 160$$

192 people attended Friday night

b) Sat \rightarrow 75% of Friday's attendance

$$75\% \text{ of } 192$$

$$0.75 \times 192$$

144 people attended Sat.

c) 3 nights

$$\underline{160} + 192 + \underline{144}$$

496 people attended in the 3 nights.

5. a) Selling Price 124% of purchased price
 124% of 450 000
 $1.24 \times 450\,000$
 558 000 is selling price

b) 124% of 450 000
 100% of 450 000 + 25% of 450 000
 $450\,000 + 110\,000$
 560 000

c) Increase over 3 years
 $558\,000 - 450\,000$
 108 000

b. 1.2% spelled incorrectly
 Spelled correctly
 $100 - 1.2 = 98.8\%$ spelled correct
 98.8% of 500
 0.988×500
 494 words spelled correctly

b) $\approx 1\%$ spelled wrong
 1% of 500
 $(500 \div 100) = 5$ spelled wrong
 $500 - 5 = 495$ correct.

$$\begin{aligned} 1.2\% \text{ of } 500 &= \text{wrong} \\ \downarrow \\ 0.012 \times 500 &= \text{wrong} \\ \underbrace{\hspace{2cm}} & \\ 6 &= \text{wrong} \end{aligned}$$

$$\begin{aligned} \text{Right} &= 500 - 6 \\ &= 494 \end{aligned}$$

Sheet - Extra Practice 3

1a) 30% of $n = 12$

$$0.3n = 12$$

$$\frac{0.3n}{0.3} = \frac{12}{0.3}$$

$$n = 40$$

$$30\% \text{ of } n = 12$$

$$10\% \text{ of } n = 12 \div 3$$

$$100\% \text{ of } n = 4 \times 10 = 40$$

b) 2% of $n = 9$

$$0.02n = 9$$

$$\frac{0.02n}{0.02} = \frac{9}{0.02}$$

$$n = 450$$

$$1\% \text{ of } n = 9 \div 2 = 4.5$$

$$100\% \text{ of } n = 4.5 \times 100 = 450$$

c) 150% of $n = 60$

$$1.5n = 60$$

$$\frac{1.5n}{1.5} = \frac{60}{1.5}$$

$$n = 40$$

$$50\% \text{ of } n = 60 \div 3 = 20$$

$$100\% \text{ of } n = 20 \times 2 = 40$$

d) 55% of $n = 11$

$$0.55n = 11$$

$$\frac{0.55n}{0.55} = \frac{11}{0.55}$$

$$n = 20$$

$$5\% \text{ of } n = 11 \div 11 = 1$$

$$100\% \text{ of } n = 1 \times 20 = 20$$

2. a) 8% of is 72

$$0.08n = 72$$

$$\frac{0.08n}{0.08} = \frac{72}{0.08}$$

$$n = 900$$

b) 0.6% of = 18

$$0.006n = 18$$

$$\frac{0.006n}{0.006} = \frac{18}{0.006}$$

$$n = 3000$$

c) 120% of is 24

$$1.2n = 24$$

$$\frac{1.2n}{1.2} = \frac{24}{1.2}$$

$$n = 20$$

$$10\% = 2$$

$$100\% = 20$$

d) 32% of is 64

$$0.32 \times n = 64$$

$$\frac{0.32n}{0.32} = \frac{64}{0.32}$$

$$n = 200$$

$$1\% = 2$$

$$100\% = 200$$

$$\begin{aligned} 3a) \text{ Amt Inc} &= 99.9 - 93.9 \\ &= 6 \end{aligned}$$

$$\begin{aligned} \% \text{ Inc} &= \frac{\text{Amt Inc}}{\text{Orig Amt}} \times 100\% \\ &= \frac{6}{93.9} \times 100\% \\ &= 0.064 \times 100\% \\ &= 6.4\% \end{aligned}$$

$$\begin{aligned} b) \text{ Amt Inc} &= 36000 - 32000 \\ &= 4000 \end{aligned}$$

$$\begin{aligned} \% \text{ Inc} &= \frac{\text{Amt Inc}}{\text{Orig Amt}} \times 100\% \\ &= \frac{4000}{32000} \times 100\% \\ &= 0.125 \times 100\% \\ &= 12.5\% \end{aligned}$$

$$\begin{aligned} c) \text{ Amt Inc} &= 2.49 - 1.99 \\ &= 0.50 \end{aligned}$$

$$\begin{aligned} \% \text{ Inc} &= \frac{\text{Amt Inc}}{\text{Orig Amt}} \times 100\% \\ &= \frac{0.50}{1.99} \times 100\% \\ &= 0.251 \times 100\% \\ &= 25.1\% \end{aligned}$$

$$4. \text{ Amt Dec} = 6800 - 5200 \\ = 1600$$

$$\% \text{ Dec} = \frac{\text{Amt Dec}}{\text{Orig Amt}} \times 100\% \\ = \frac{1600}{6800} \times 100\% \\ = 0.235 \times 100\% \\ 23.5\%$$

$$b) \text{ Amt Dec} = 840 - 672 \\ = 168$$

$$\% \text{ Dec} = \frac{\text{Amt Dec}}{\text{Orig Amt}} \times 100\% \\ = \frac{168}{840} \times 100\% \\ = 0.2 \times 100\% \\ 20\%$$

$$c) \text{ Amt Dec} = 1500 - 1200 \\ = 300$$

$$\% \text{ Dec} = \frac{\text{Amt Dec}}{\text{Orig Amt}} \times 100\% \\ = \frac{300}{1500} \times 100\% \\ = 0.2 \times 100\% \\ 20\%$$

5. 4% of all labels are defective

372 are defective.

4% of n is 372

$$0.04n = 372$$

$$\frac{0.04n}{0.04} = \frac{372}{0.04}$$

$$n = 9300 \text{ in total}$$

Not Defective

$$9300 - 372 = 8928$$

6. 75% of kicks were successful

75% of n is 51

$$0.75n = 51$$

$$\frac{0.75n}{0.75} = \frac{51}{0.75}$$

$$n = 68 \text{ kicks in total}$$

7. 15% of bill is tip

15% of n = 10.25

$$0.15n = 10.25$$

$$\frac{0.15n}{0.15} = \frac{10.25}{0.15}$$

$$n = 68.33 \text{ is the total bill.}$$

8. 2005 \rightarrow 250 cards

2006 \rightarrow increase of 12%

Inc \rightarrow 12% of 250

$$0.12 \times 250$$

30 increase

2006 \rightarrow 250 + 30
280

2007 \rightarrow increase of 15%

Inc \rightarrow 15% of 280

$$0.15 \times 280$$

42

2007 \rightarrow 280 + 42
322 cards at the end
of 2007

b) This NOT the same as taking 27% of 250, since the second increase involved more cards

http://www.taxtips.ca/provincial_sales_tax.htm

Sales Tax and Total Cost

Sales tax is money that you pay to the government on almost everything that you buy. In NB, we pay harmonized sales tax(HST) which is 15 %

Provincial Sales tax rate

BC	7% PST +5% GST
AB	0% PST + 5%GST
SK	5% PST + 5%GST
MN	7% PST + 8%GST
ON	13% HST
QC	9.975% + 5% GST*
NL	15% HST
NB	15% HST
NS	15% HST
PE	15% HST

Prov/ Terr	2017 Rate		Provincial Web Sites
	GST/HST	PST	
AB	5% GST	n/a	
BC	5% GST	7% ^(a)	BC Consumer Taxes TaxTips.ca PST in BC
MB	5% GST	8%	Manitoba Retail Sales Tax
NB	15% HST	n/a	New Brunswick HST
NL	15% HST	n/a	Newfoundland & Labrador HST
NS	15% HST	n/a	Nova Scotia HST
NT	5% GST	n/a	
NU	5% GST	n/a	
			Ontario Retail Sales Tax
ON	13% HST	n/a ^(b)	TaxTips.ca Ontario HST Ontario HST
			Prince Edward Island Retail Sales Tax
PE	15% HST	n/a	Prince Edward Island HST
			Quebec Consumption Taxes - Businesses
QC	5% GST	9.975%	Quebec Consumption Taxes - Individuals Basic Rules for GST and QST - rates
SK	5% GST	5% / 6% ^(c)	Saskatchewan Provincial Sales Tax
YT	5% GST	n/a	

We pay sales tax on the price of the item, so to calculate the amount of sales tax, we take 15% of the price. GST is 5%.

Example; A sweater sells for \$45.

- find the amount of tax you have to pay.
- find the total cost of the sweater.

$$\text{NB Tax} \Rightarrow 15\%$$



(a) Sales Tax = 15% of Cost

$$= 0.15 \times \$45 = \$6.75$$

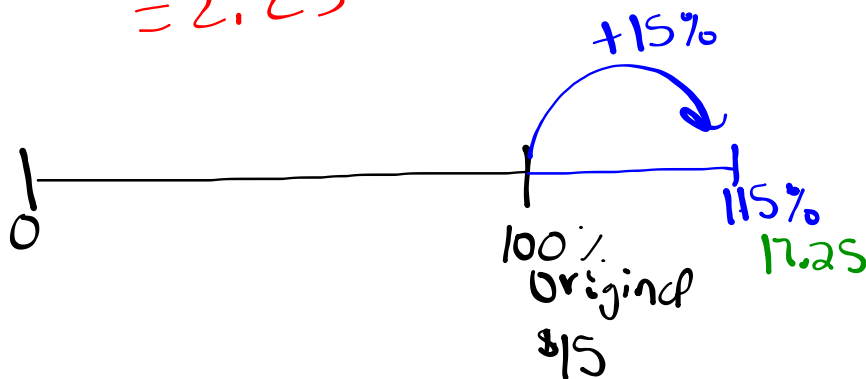
(b) Total cost = Original Cost + tax

$$= \$45 + \$6.75 = \$51.75$$

2. Find the amount of tax and total cost of a book that cost \$15.

(a) Tax = $15\% \text{ of } 15$
 \downarrow
 0.15×15
 $= 2.25$

(b) Total cost $15 + 2.25$
 $= 17.25$



3. Find the total cost of a stereo that sells for \$229.99. (NB Tax)

Tax = $15\% \text{ of Orig}$
 $= 0.15 \times 229.99$
 $= 34.4985$
 ≈ 34.50

OR Cost with tax
 $= 115\% \text{ of Orig}$
 $= 1.15 \times 229.99$
 $= 264.49$

Cost w tax = $\overset{\text{Orig + tax}}{229.99 + 34.50}$
 $= 264.49$

Class Homework

Homework pg. 260 #4-9

(Use 15% HST for all questions)

4 a b (only tax)

5 a b (only tax)

7 a b
↓ ↓
tax Total
price price
i) Calculator
ii) Skate

9 (No tax → 28% increase)
then add tax after 3 years