%, Decimal, Fraction

Pg 1

% $\xrightarrow{\div \text{by } 100}$ Decimal $\xrightarrow{\text{Place value}}$ Fraction

Ex)

	Fraction		Decimal		%
a)	$\frac{16}{29}$	$16 \div 29$	0.5517	$\times 100$	55.17 %
b)	$\frac{1}{1000}$	Place value	0.001	$\times 100$	0.1 %
c)	$\frac{37}{100}$	Place Value	0.37	$\div 100$	37 %
d)	$\frac{26}{5}$	Top ÷ Bottom	5.2	$\times 100$	520 %

b) stops in thousandths place (New Denominator)

c) stops in hundredths place so (100 is new Denominator)

Fraction $\xrightarrow{\text{Top} \div \text{Bottom}}$ Decimal $\xrightarrow{\times 100}$ %

% can be larger than 100% or smaller than 1%

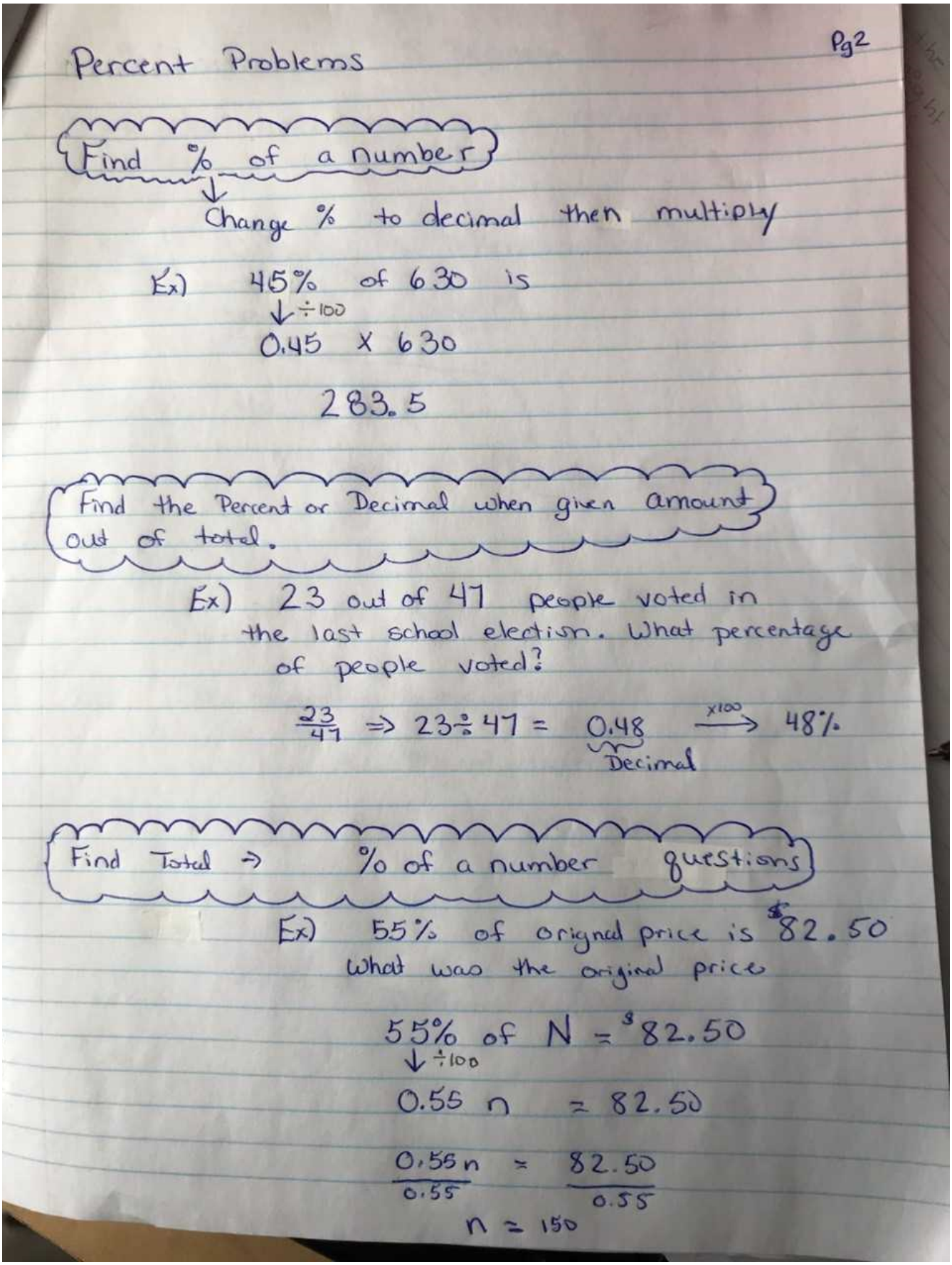
Ex) 250% is 2.5 as decimal, $\frac{25}{10} = \frac{5}{2}$ (Fraction)

0.06% is 0.0006 as decimal, $\frac{6}{10\,000} = \frac{3}{5000}$ (Fraction)

Fractions $\longrightarrow$ % (take fractions to decimal first, then to %)

% $\longrightarrow$ Fraction Put whole number over 100

(Ex) 31% $\Rightarrow \frac{31}{100}$



Percent Problems

Pg 2

Find % of a number

↓

Change % to decimal then multiply

Ex) 45% of 630 is

↓ ÷100

0.45 × 630

283.5

Find the Percent or Decimal when given amount out of total.

Ex) 23 out of 47 people voted in the last school election. What percentage of people voted?

$\frac{23}{47} \Rightarrow 23 \div 47 = \underbrace{0.48}_{\text{Decimal}} \xrightarrow{\times 100} 48\%$

Find Total → % of a number questions

Ex) 55% of orignal price is $82.50

What was the original price

55% of N = $82.50

↓ ÷100

0.55 n = 82.50

$\frac{0.55n}{0.55} = \frac{82.50}{0.55}$

n = 150

% Increase or % Decrease Questions

→ Use when you see a change in price, population or data.

Step1 Calculate the Difference of the numbers

Difference = Big − Small

Step2 Use formula

$$\%\,\text{Difference} = (\text{Difference} \div \text{original \#}) \times 100$$

Divide first

$$\times 100$$

$$\approx \quad \%$$

Ex) The population in the year 2015 was 16426. But it increased to 21464 in the year 2019. What was the percent increase?

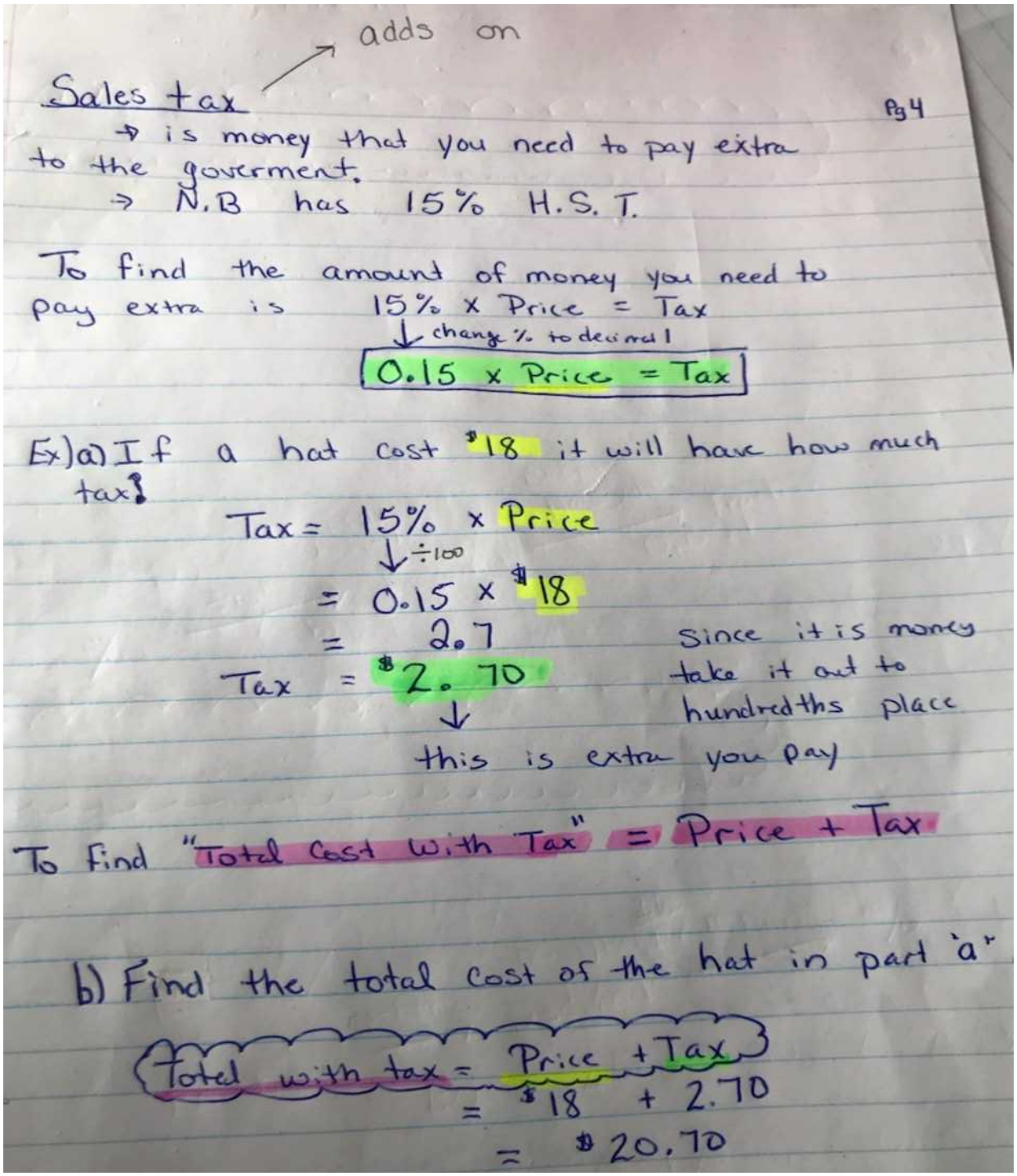
Step1

$$\text{Difference} = \text{Big} - \text{Small}$$
$$= 21464 - 16426$$
$$= 5038$$

Step2

1st # in question for population

$$\%\,\text{Difference} = (\text{Difference} \div \text{ORIGINAL}) \times 100$$
$$(5038 \div 16426) \times 100$$
$$0.307 \times 100$$
$$\approx 30.7\%$$



adds on

Sales tax

Pg 4

→ is money that you need to pay extra to the goverment.

→ N.B has 15% H.S.T.

To find the amount of money you need to pay extra is 15% x Price = Tax

↓ change % to decimal

0.15 x Price = Tax

Ex) a) If a hat cost $18 it will have how much tax?

Tax = 15% x Price

↓ ÷100

= 0.15 x $18

= 2.7

Tax = $2.70

↓

this is extra you pay

Since it is money take it out to hundredths place

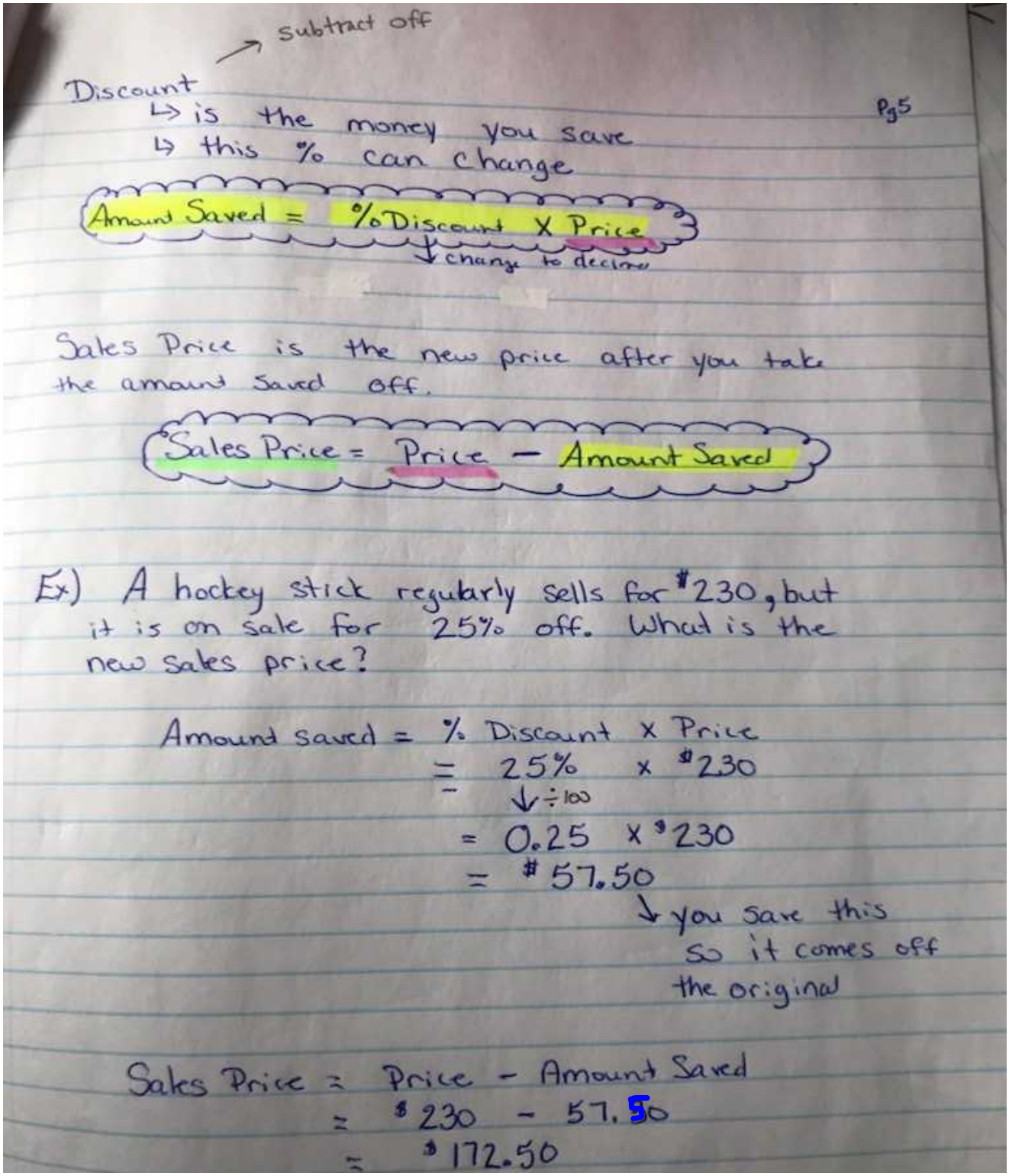
To find "Total Cost with Tax" = Price + Tax

b) Find the total cost of the hat in part 'a'

Total with tax = Price + Tax

= $18 + 2.70

= $20.70



subtract off

Discount
↳ is the money you save
↳ this % can change

Pg 5

Amount Saved = % Discount × Price
↓ change to decimal

Sales Price is the new price after you take the amount saved off.

Sales Price = Price − Amount Saved

Ex) A hockey stick regularly sells for $230, but it is on sale for 25% off. What is the new sales price?

Amount saved = % Discount × Price
= 25% × $230
↓ ÷100
= 0.25 × $230
= $57.50
↓ you save this so it comes off the original

Sales Price = Price − Amount Saved
= $230 − 57.50
= $172.50