6.3 RPJ pgs. 121-123: % Proportion

% Proportion: $\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100}$

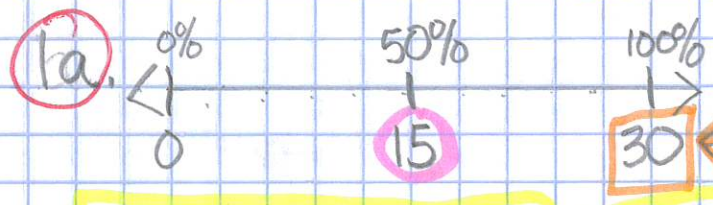
* 3 types of questions

① Find the PART of a # ← Given: whole, %

② Find the WHOLE ← Given: PART, %

③ Find the % ← Given: PART, WHOLE

1a. What is 50% of 30?



% ↑ Whole

$\frac{50}{100} = \frac{1}{2}$ $\frac{1}{2}$ of 30 = 15

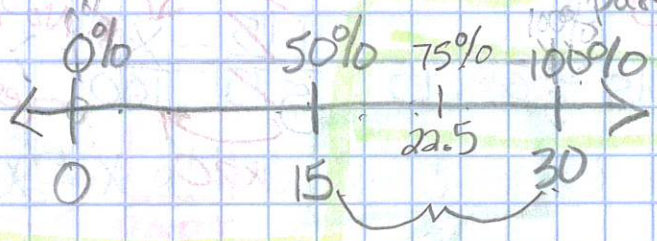
multiply

% Proportion: $\frac{15}{30} = \frac{50}{100}$ ← no %'s, no signs

1b. Part

What # is 75% of 30? Find PART

part ↑ ↑ whole

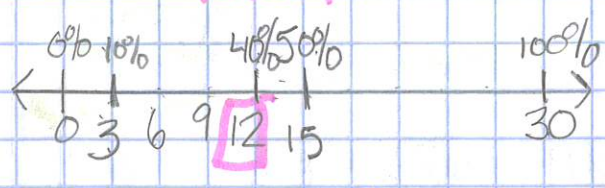


$\frac{22.5}{30} = \frac{75}{100}$

15 ÷ 2 = 7.5 7.5 + 15 = 22.5

1c. What # is 40% of 30? Need PART

PART ↑ whole



10% of 30 = 3

30 ÷ 10 = 30/10 = 3

$\frac{12}{30} = \frac{40}{100}$

.3% Proportion - 2 ways.

$\frac{\text{PART}}{\text{WHOLE}} = \frac{\%}{100}$ → also $\frac{\text{IS}}{\text{OF}} = \frac{\%}{100}$

Ex1 75 is 50% of what #?
PART WHOLE

$\frac{75}{y} = \frac{50}{100}$

Ex2 Dora had 60 boxes of girl scout cookies. If she sold 80% of them, what is the # of boxes left?

$\frac{C}{60} = \frac{80}{100}$ → $\frac{C}{60} = \frac{80}{100}$ (×6 / ×6) $C = 48$ cookies sold

$60 - 48 = 12$ boxes left

How to solve % Proportions

Ex3 Multiply side to side (or DIVIDE)

$\frac{3}{25} = \frac{x}{100}$ (×4 / ×4)

$x = 12\%$

Ex4 Multiply/Divide top to bottom

$\div 10\left(\frac{3}{30} = \frac{x}{100}\right) \div 10$

$x = 10\%$

Ex5 Simplify 1ST

$\frac{18}{60} = \frac{x}{100}$

$\frac{18}{60} \div \frac{3}{3} = \frac{6}{20}$

$\frac{6}{20} = \frac{x}{100}$ (×5 / ×5)

$x = 30\%$

Ex6 Cross-Multiply

$\frac{12}{x} = \frac{75}{100}$

$15x = 12(100)$

$\frac{15x}{15} = \frac{1,200}{15}$

$x = 80$