

5C #1

$$Z = \frac{X - \mu}{\sigma}$$

$\mu$  = mean

$\sigma$  = standard deviation

$X$  = data value

$Z$  = how many standard deviations  $X$  is above or below the mean

$$Z = \text{invnorm}(0.25) = -0.674$$

$$Z = \frac{X - \mu}{\sigma}$$

percentile

$$-0.674 = \frac{p - 5}{0.1}$$

$$-0.0674 = p - 5$$

$$p = 4.93g$$

#3

$$z = \text{invnorm}(0.85) = 1.04$$

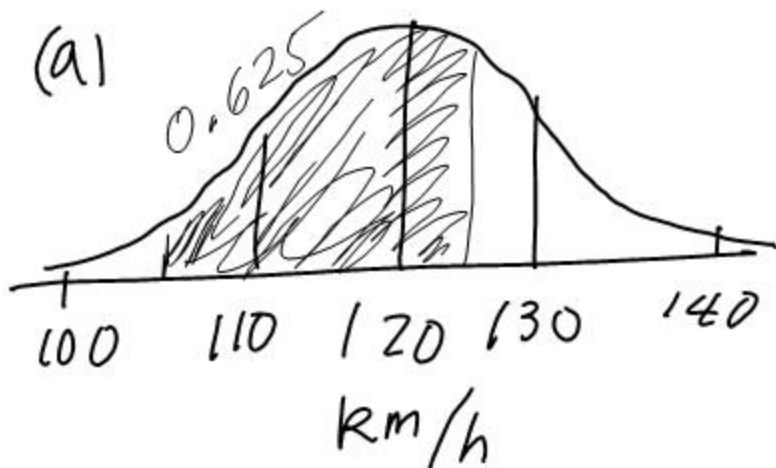
$$z = \frac{x - \mu}{\sigma}$$

percentile

$$1.04 = \frac{k - 20}{0.8}$$

$$k = 20.8 \text{ g}$$

#8



(b) 105 km/h :  $z = \frac{105 - 120}{10} = -1.5$

125 km/h :  $z = \frac{125 - 120}{10} = 0.5$

normalcdf(-1.5, 0.5) = 0.625

$$62.5\%$$

$$(c) \quad z = \text{invnorm}(0.08) = -1.41$$

$$-1.41 = \frac{\mu - 120}{10} \quad \leftarrow \quad z = \frac{x - \mu}{\sigma}$$

$$\boxed{\mu = 106 \text{ km} \cdot \text{h}^{-1}}$$

$$(d) \quad 96 \text{ km/h}: \quad z = \frac{96 - 120}{10} = -2.4$$

$$134 \text{ km/h}: \quad z = \frac{134 - 120}{10} = 1.4$$

$$\text{normal cdf}(-2.4, 1.4) = 0.911$$

$$(0.911)(800 \text{ cars}) = \underline{\underline{729 \text{ cars}}}$$

$$(e) \quad 130 \text{ km/h}: \quad z = \frac{130 - 120}{10} = 1$$

$$\text{normal cdf}(1, 9) = 0.159$$

$$(0.159)(800 \text{ cars}) = \underline{\underline{127 \text{ cars}}}$$

# Classwork quiz 8/28

Radishes have a mean weight of 4 ounces with a standard deviation of 1 ounce.

- (a) What proportion of radishes weigh between 3.5 and 4.5 ounces?
- (b) 10% of radishes weigh more than  $p$  ounces. find  $p$ .