

Calculating average error

$$\text{average error} = \frac{\text{max} - \text{min}}{2}$$

Ex ① How fast?

$$\vec{d} = 3.0 \text{ km} \pm 100 \text{ m} = 3000 \text{ m} \pm 100 \text{ m}$$

$$t = 15 \text{ min} \pm 1 \text{ min} = 900 \text{ s} \pm 60 \text{ s}$$

STEP ① calculate best

$$v = \frac{d}{t} = \frac{3000}{900} = 3.33 \text{ m/s}$$

$$v = \frac{d}{t} = \frac{3100}{840} = 3.69 \text{ m/s}$$

STEP ② calculate lowest

$$v = \frac{d}{t} = \frac{2900}{960} = 3.02 \text{ m/s}$$

$$\text{Final } 3.33 \text{ m/s} \pm \left(\frac{3.69 - 3.02}{2} \right)$$

$$3.33 \text{ m/s} \pm 0.335$$

$$3.33 \text{ m/s} \pm 0.34 \text{ m/s}$$