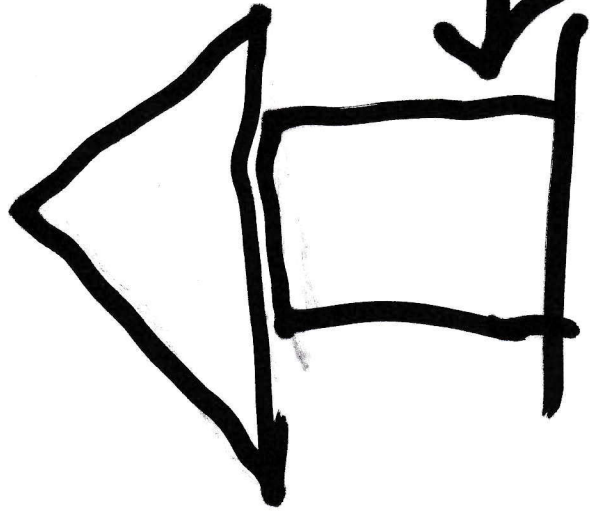
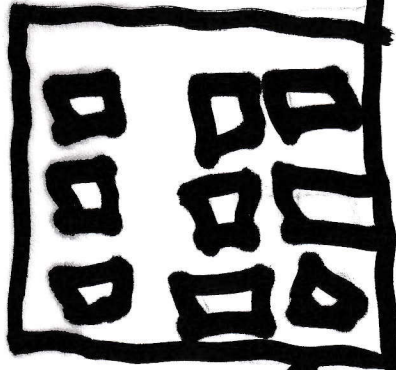




home

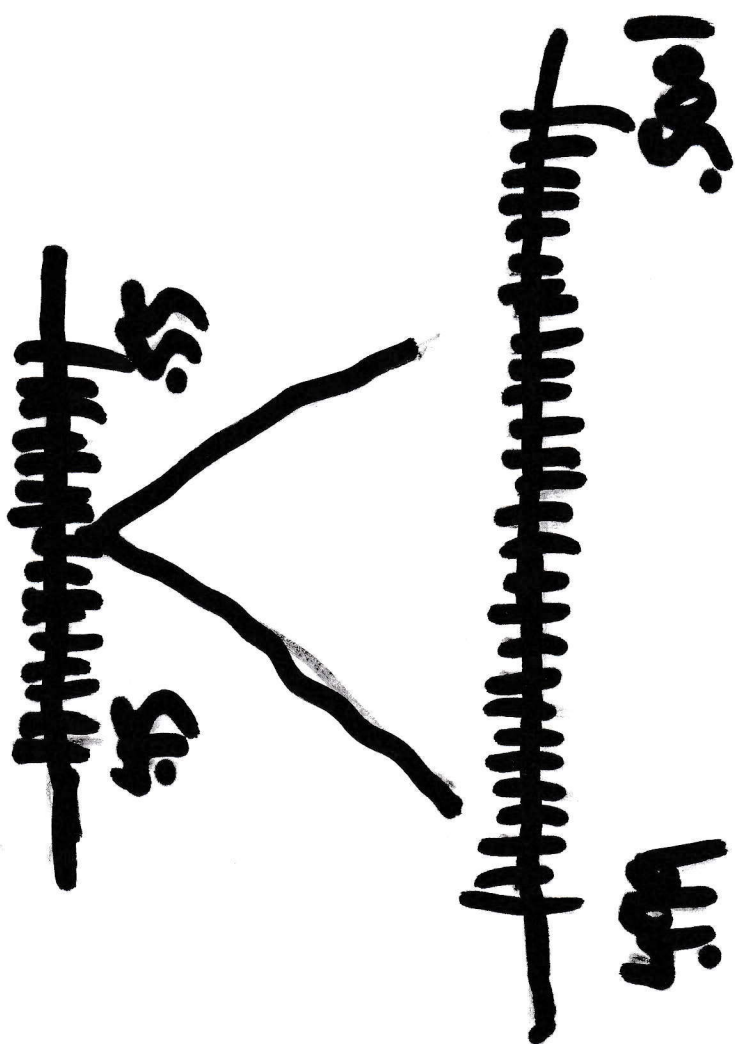


X miles



work

X is a number,
but what is a number?





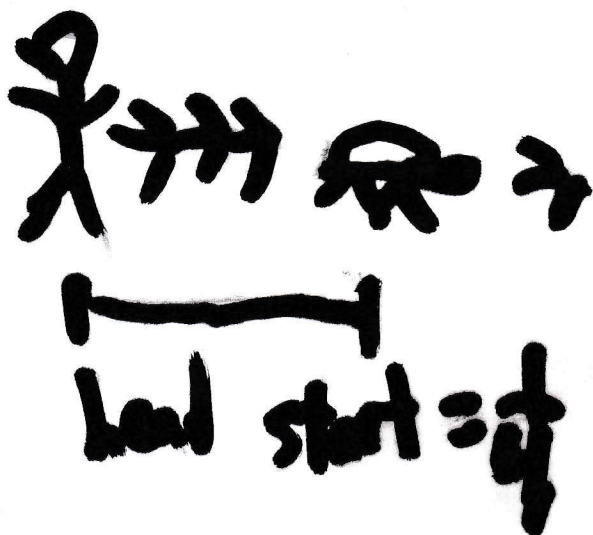
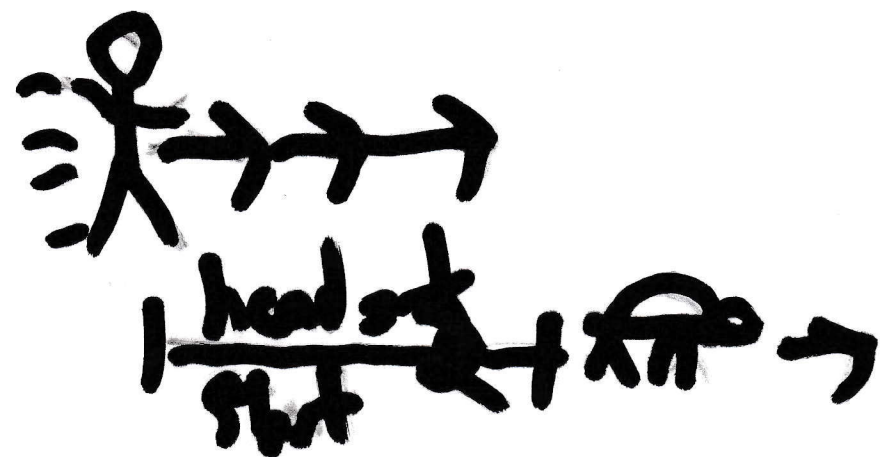
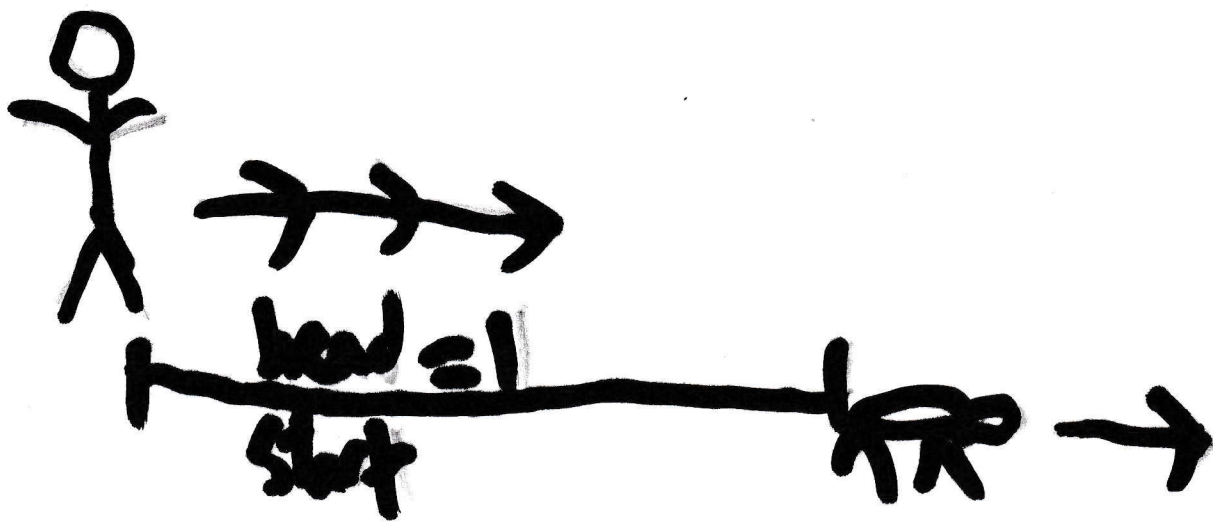
1, 2, 3, 4, 5, 6, ... Integers

$1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$ Rational (fractions)

$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \dots$

$\pi, \dots$

Discrete



$$10 = 1 + \frac{0}{10} + 1$$

$$1.00 = 1 + \frac{0}{10} + \frac{0}{100} + 1$$

$$1.000 = 1 + \frac{0}{10} + \frac{0}{100} + \frac{0}{1000} + 1$$

$$(1.00 \pm 0.01) \times 10^2 = 100 \pm 1$$

$$(1.000 \pm 0.001) \times 10^2 = 100.0 \pm 0.1$$

... but is $2 = 2.0$?

$$1.0 + 1.00 = 2.0$$

$$1.0 + 1 = 2.0 \quad \dots \quad \text{it's } 2$$

$$1.0 + 1.0 = 2.0$$

$$1 + 1 = 2$$

what about ...

$$1 + \frac{9}{10} + \frac{6}{100} + \frac{0}{1000} + \frac{1}{10000} + \dots = \frac{1}{8}$$

Well, ... what is $\frac{1}{8} = ?$

$$?? = 0??$$