

☆ Course outline

① Linear Algebra

② Calculus

③ Co-ordinate Geometry

④ Optimization

Flow:

How is this related
to ML

↓
Understand concept

↓
Visualization

↓
Maths

↓
code

③ Regression Problem

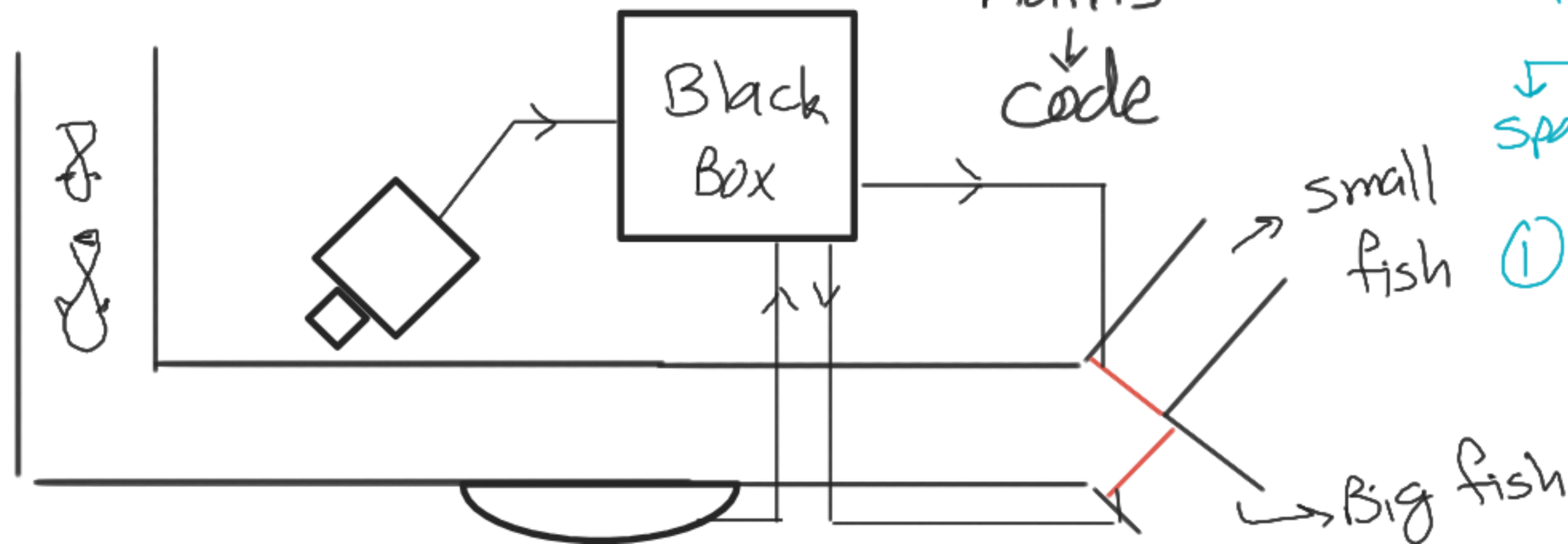
→ House price estimation

② multiclass-classification

incoming mail

↓ spam ↓ important ↓ social

① Binary classification problem



Record/
Datapoint

len	width	color	weight	type
7	3	R	20	S
25	10	B	250	L

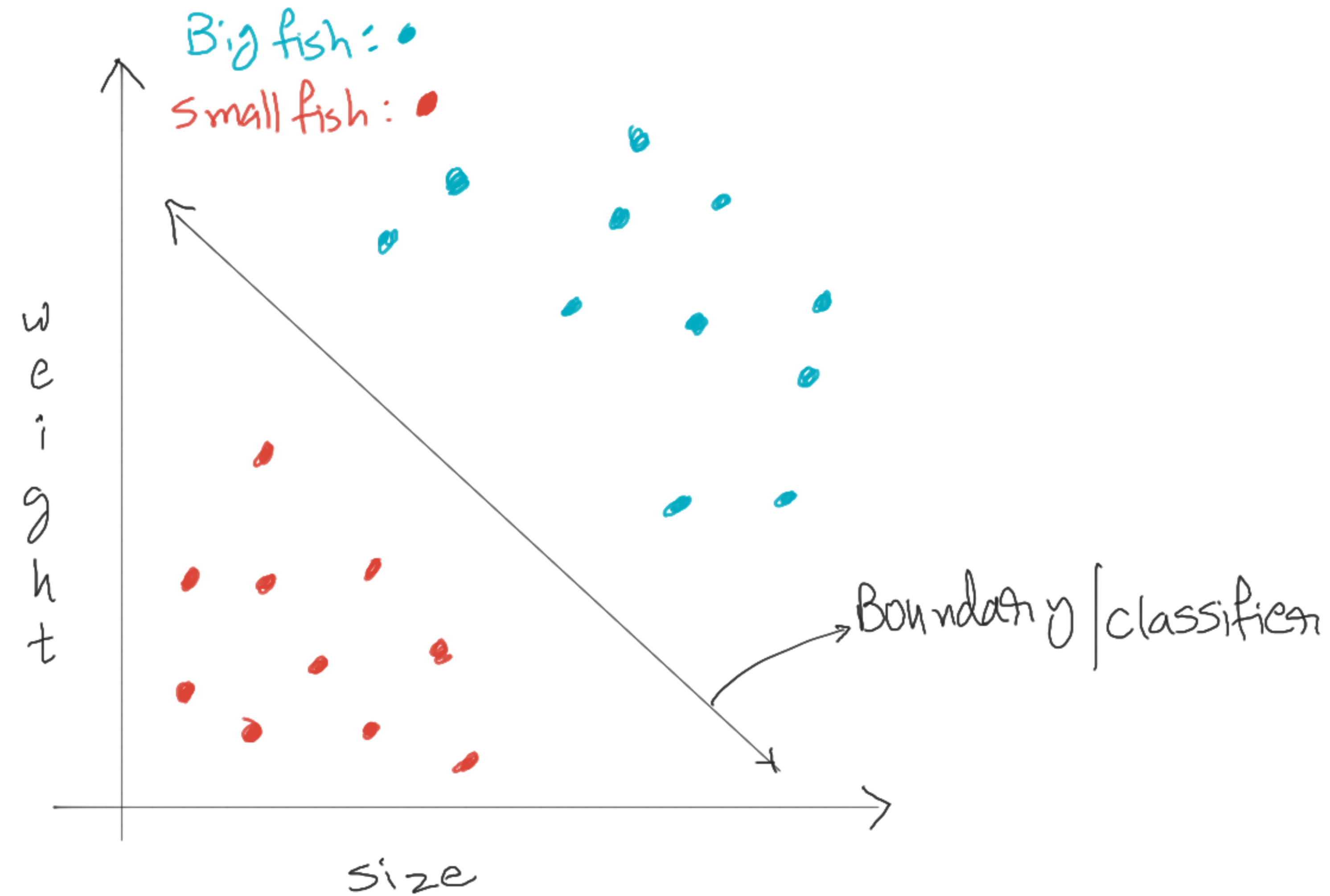
Independent
variables

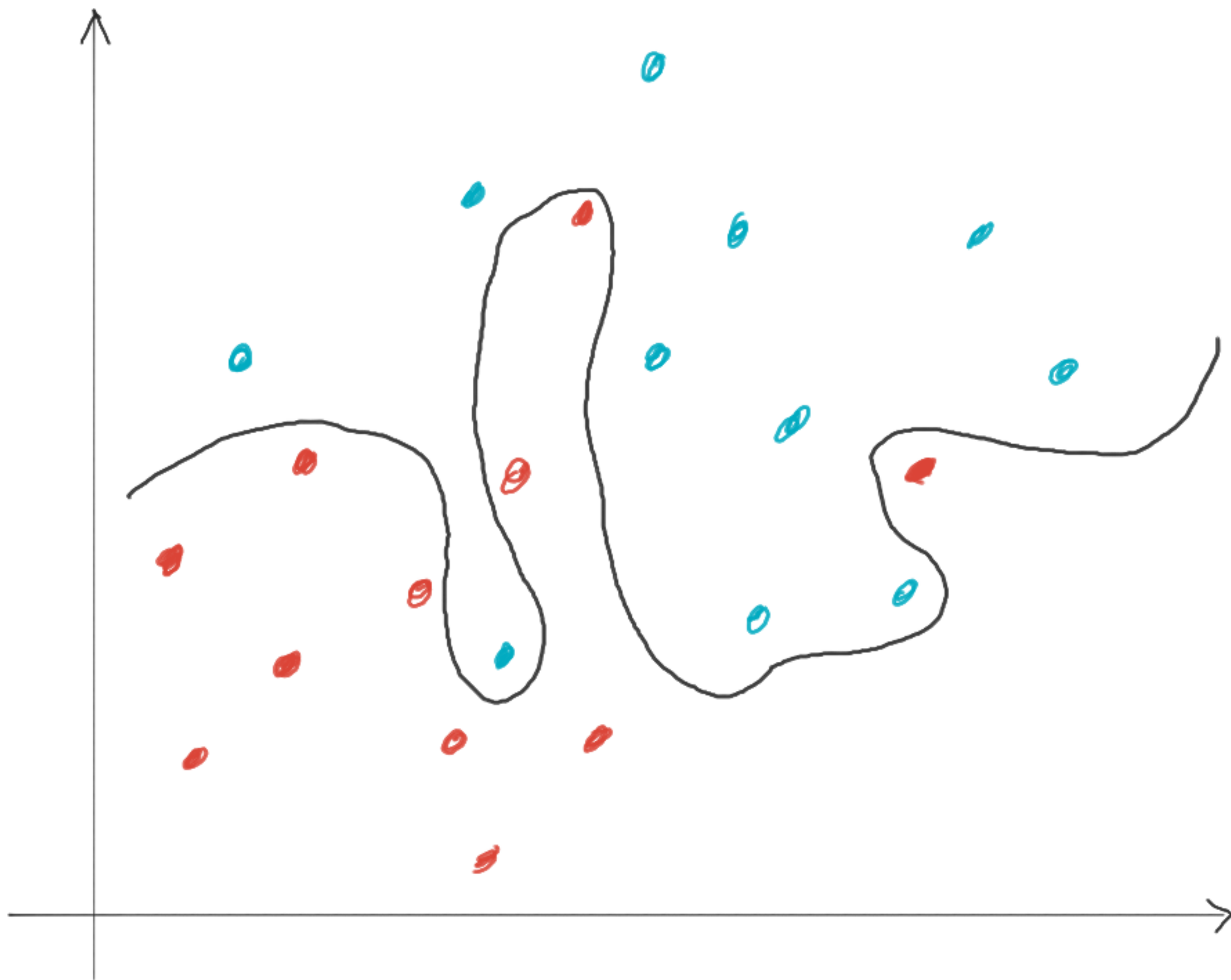
Features

Target/
Dependent
variable

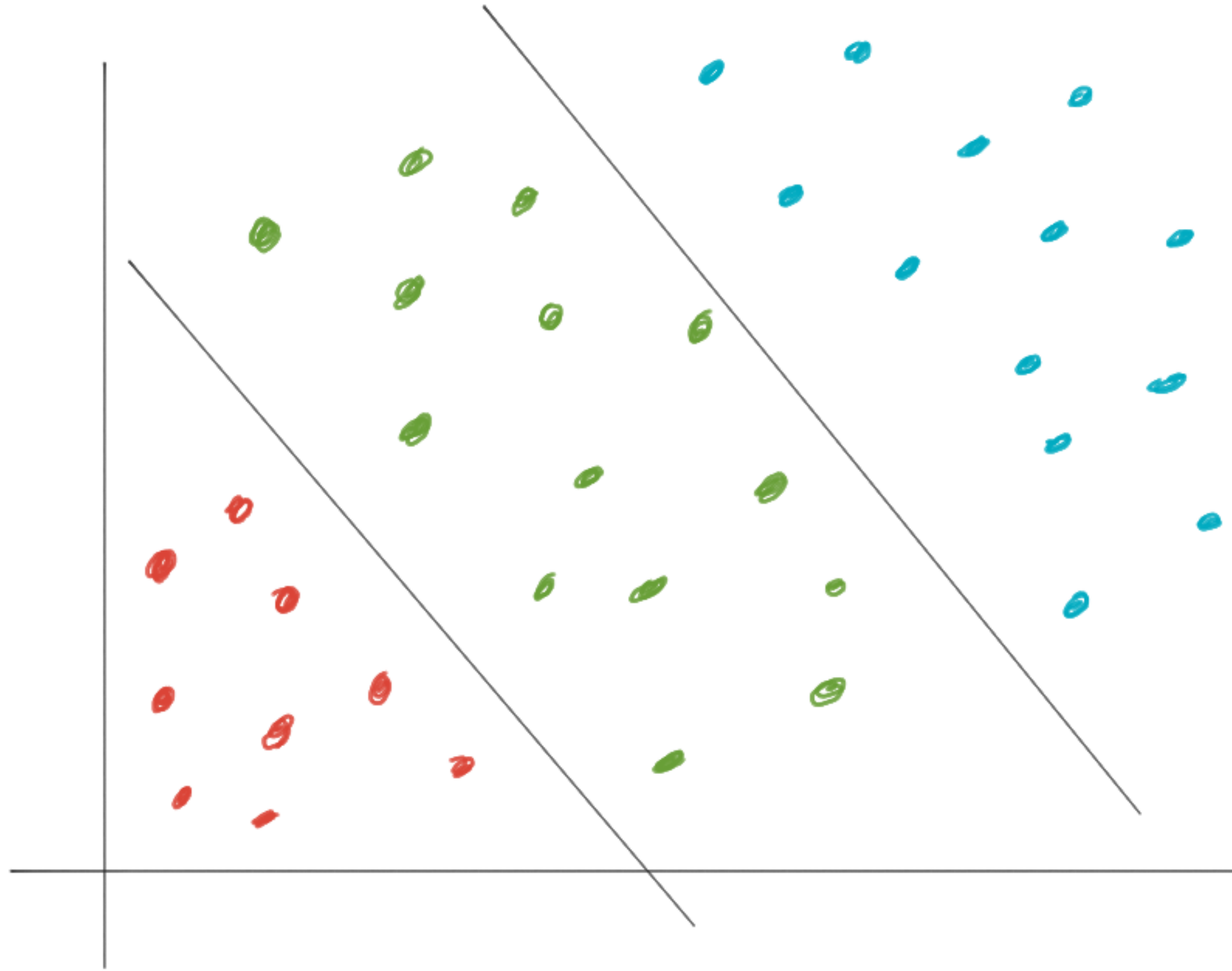
Label

Size	weight	type
21	20	S
250	250	L

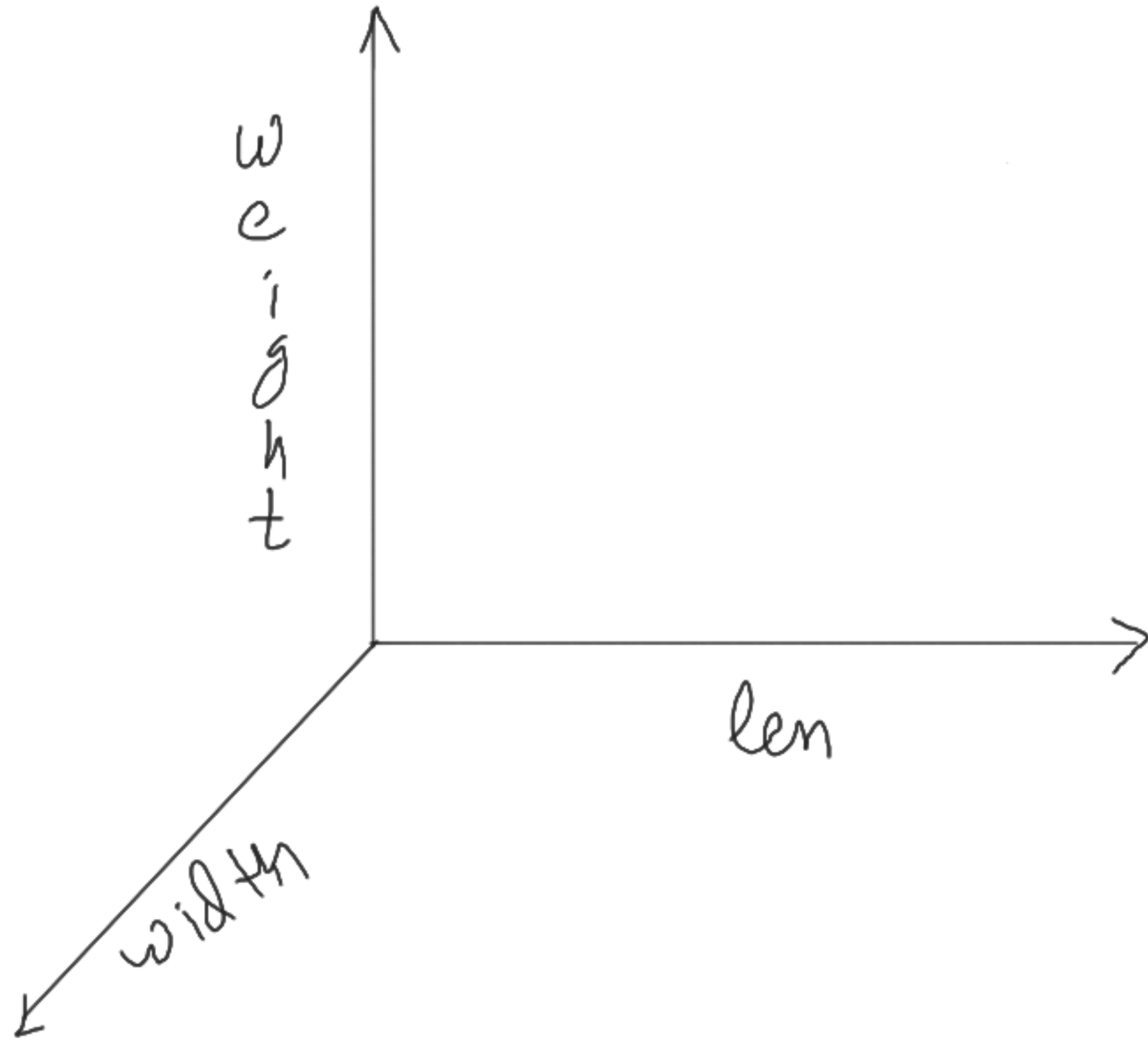




★ What if I have 3-types of fishes - s/m/l ?



☆ What if I have 3 features - len, width & weight



★ Forms of eqⁿ of straight line:

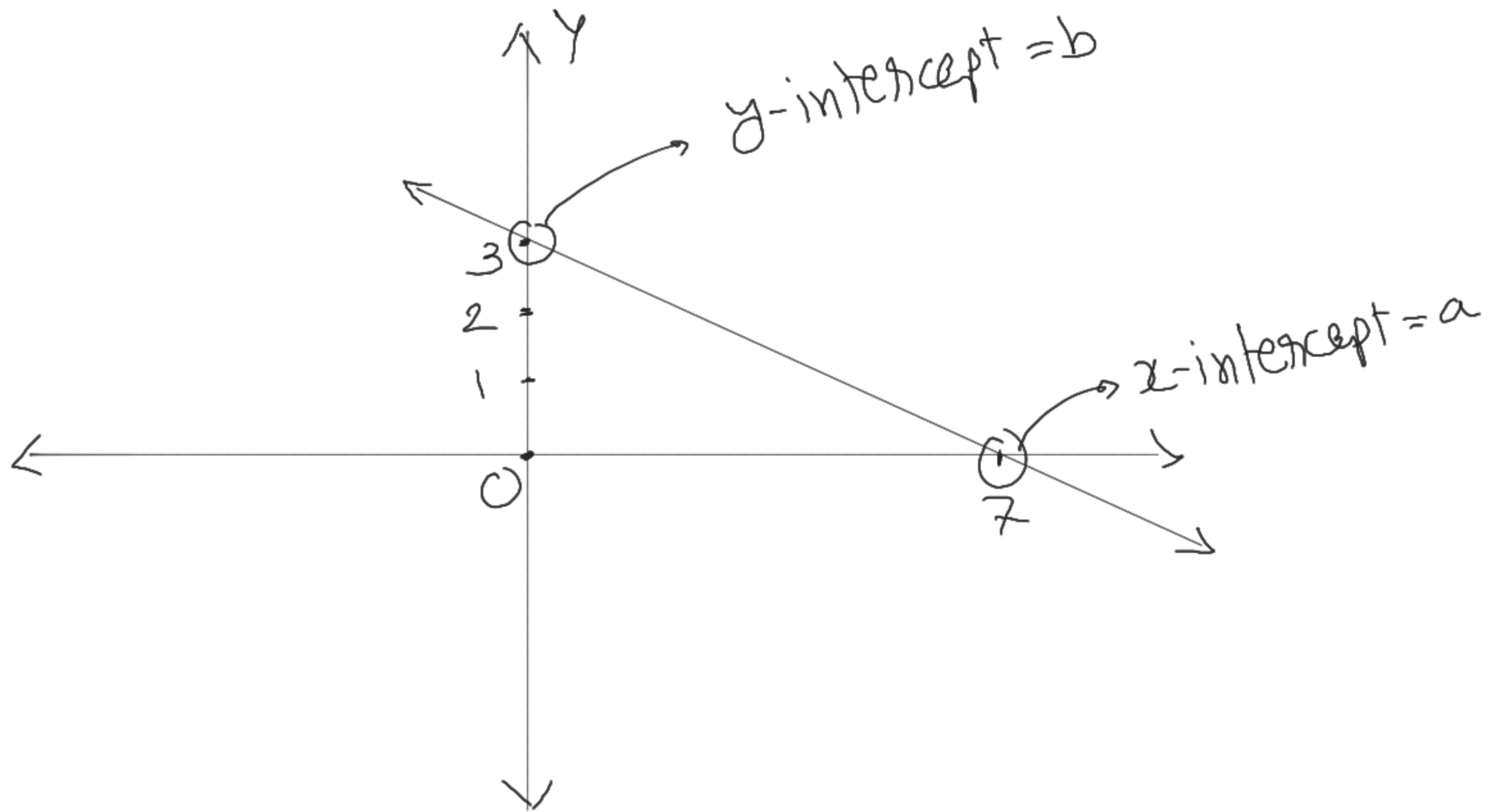
① $y = mx + c$ ——— slope-intercept formula

② $(y - y_1) = m(x - x_1)$ ——— slope-point formula

③ $(y - y_1) = \frac{(y_2 - y_1)}{(x_2 - x_1)} \cdot (x - x_1)$ ——— Two-point formula

④ $\frac{x}{a} + \frac{y}{b} = 1$ ——— Intercept formula

⑤ $ax + by + c = 0$ ——— General form

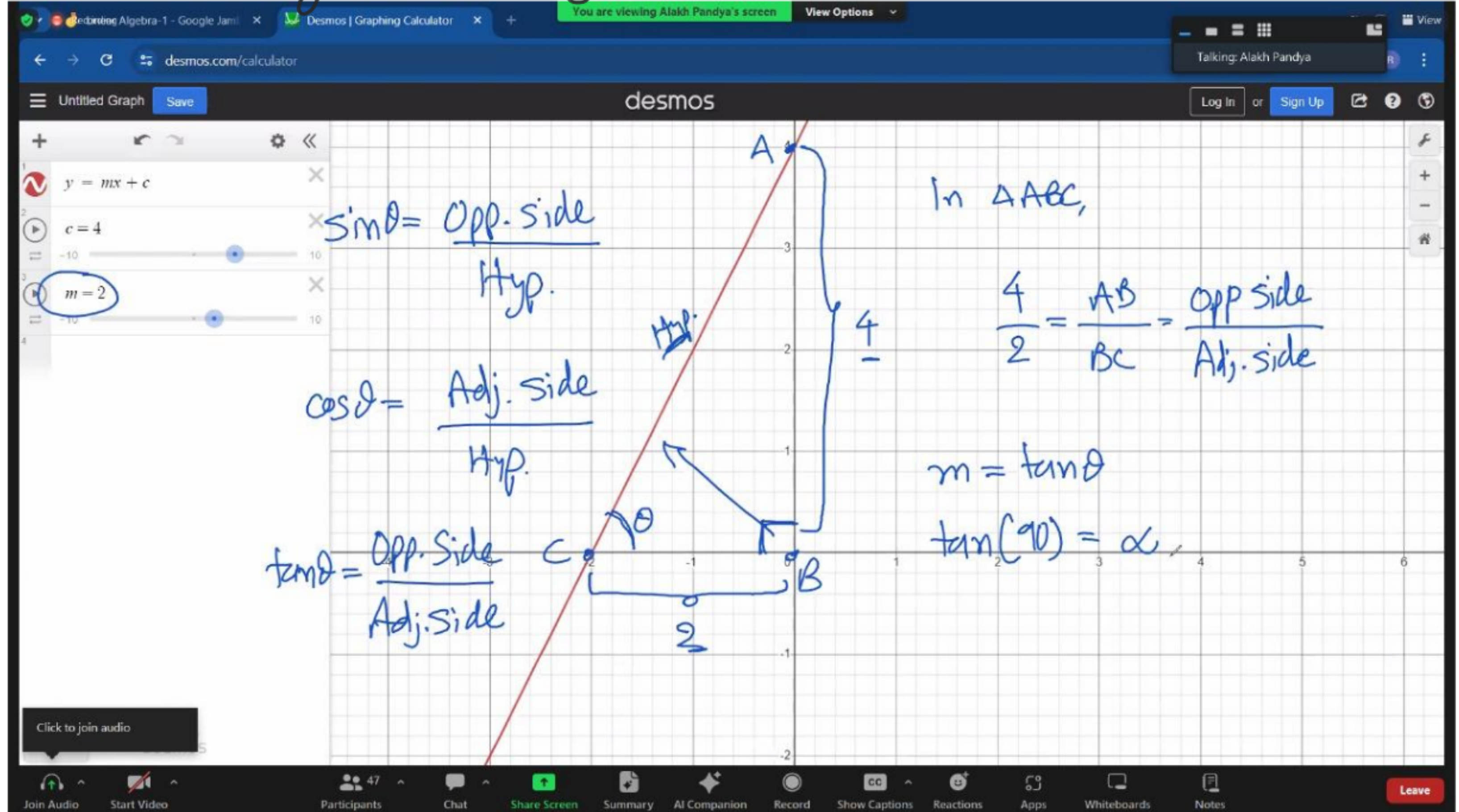


☆ For parallel lines : $m_1 = m_2$

☆ For perpendicular lines : $m_1 \cdot m_2 = -1$

$$m_2 = \frac{-1}{m_1}$$

★ Basic Trigonometry



Recording Algebra-1 - Google Jam

Desmos | Graphing Calculator

You are viewing Alakh Pandya's screen

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desmos

1

$y = mx + c$

×

2

$m = -1$

×

3

$c = -1$

×

4

$\leq c \leq$

×

5

×

Step:

$90 = \pi/2$

↺

180

$= \pi$

(S)

(AII)

(T)

(C)

$270 = 3\pi/2$

3π

0

360

3

4

3

2

1

0

-1

-2

3

2

1

0

-1

-2

180 = π

$\pi - \theta$

θ

$\tan(\pi - \theta) = \frac{3}{3} = 1 \Rightarrow -\tan \theta = 1$

$\therefore \tan \theta = -1$

Degree Radian

180 $\Rightarrow \pi$

90 $\Rightarrow \frac{\pi}{2}$

$\tan(\frac{\pi}{2} + A) = \cot(A)$

$\tan(90 + A) \rightarrow \cot$

$\tan(90 - A) \rightarrow \cot$

$\tan(\pi + A) \rightarrow +\tan(A)$

$\tan(\pi - A) \rightarrow -\tan(A)$

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