

Ex. 1: The scatter plot shows the number of cellular service subscribers in the US. Write an equation in slope-intercept form for the line of best fit that is drawn, and interpret the slope and y -intercept.

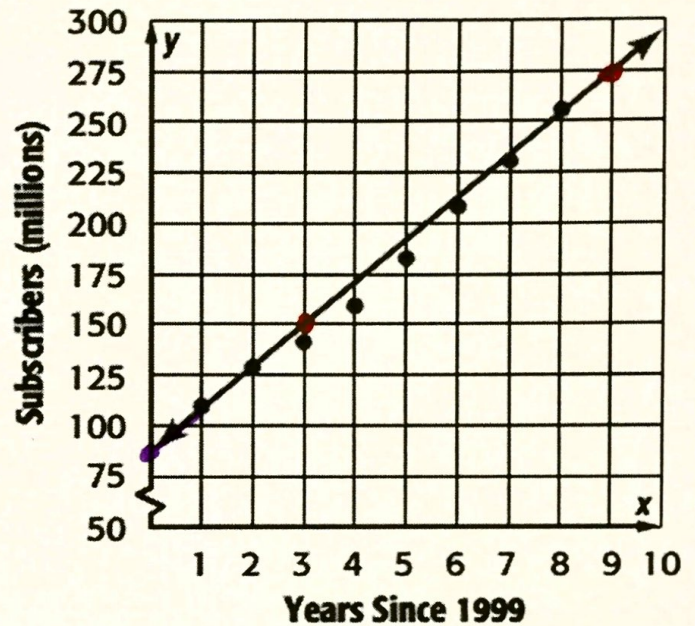
$$y = mx + b$$

Slope

$\frac{\text{Rise}}{\text{Run}}$

y -int

Where it hits the y -axis



$$y = \frac{125}{6}x + 88$$

① Find 2 nice grid crossers, probably not data points.

(3, 150) (9, 275)

② Use the 2 points to find slope (m)

$$\frac{y}{x} = \frac{275 - 150}{9 - 3} = \frac{125}{6} = m$$

$20.8\bar{3}$

Ex. 2: The scatter plot shows the average rent (in dollars per month) for a 1-bedroom apartment in New York City each year between 2000 and 2013. A line was fit to the data to model the relationship. What is the equation that matches the line?

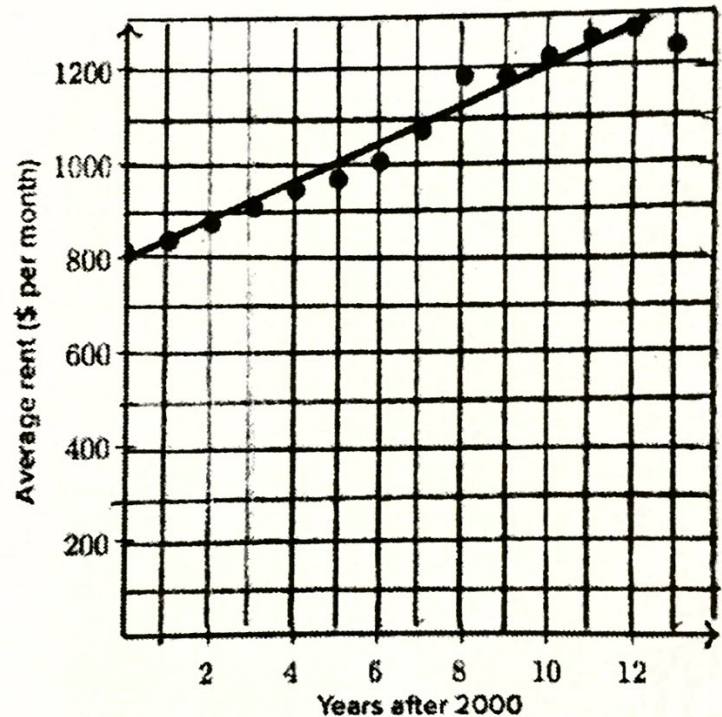
① correlation matches slope
② y-intercept

a. $y = \frac{2}{5}x + 800$

b. $y = 40x + 800$

~~c. $y = 800x + \frac{2}{5}$~~

~~d. $y = 800x + 40$~~



Ex. 3: Predict how much an apartment would cost in 2016.

$$y = 40x + 800$$

$$x = 2016 - 2000$$

$$y = 40(16) + 800$$

$$x = 16$$

$$640 + 800$$

$$y = \$1440$$

Notes 5-4 – World’s Tallest Man

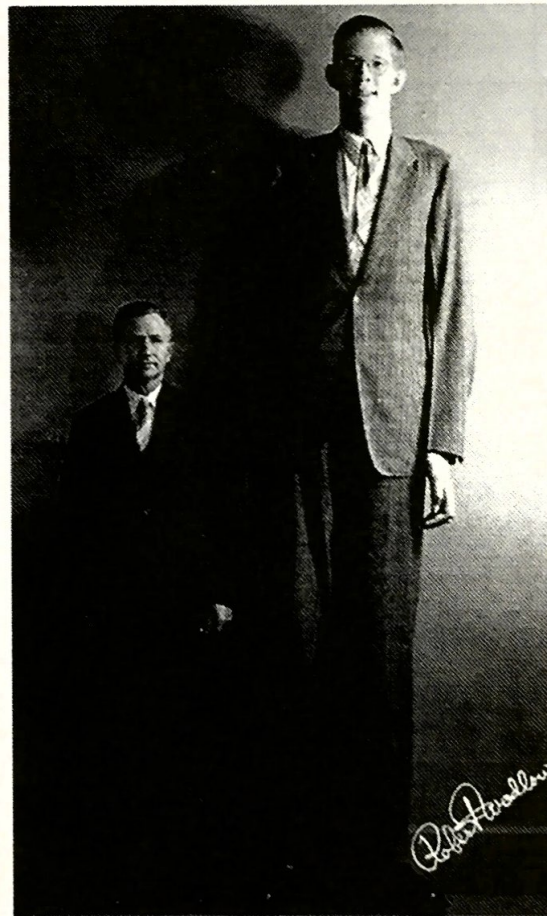
Robert Pershing Wadlow 1918 – 1940

The tallest man in medical history for whom there is irrefutable evidence is Robert Pershing Wadlow. He was born at Alton, Illinois, USA, on February 22, 1918, and when he was last measured on June 27, 1940, was found to be 2.72 m (8 ft 11.1 in) tall. His great size and his continued growth in adulthood were due to hypertrophy of his pituitary gland which results in an abnormally high level of human growth hormone. He showed no indication of an end to his growth even at the time of his death.

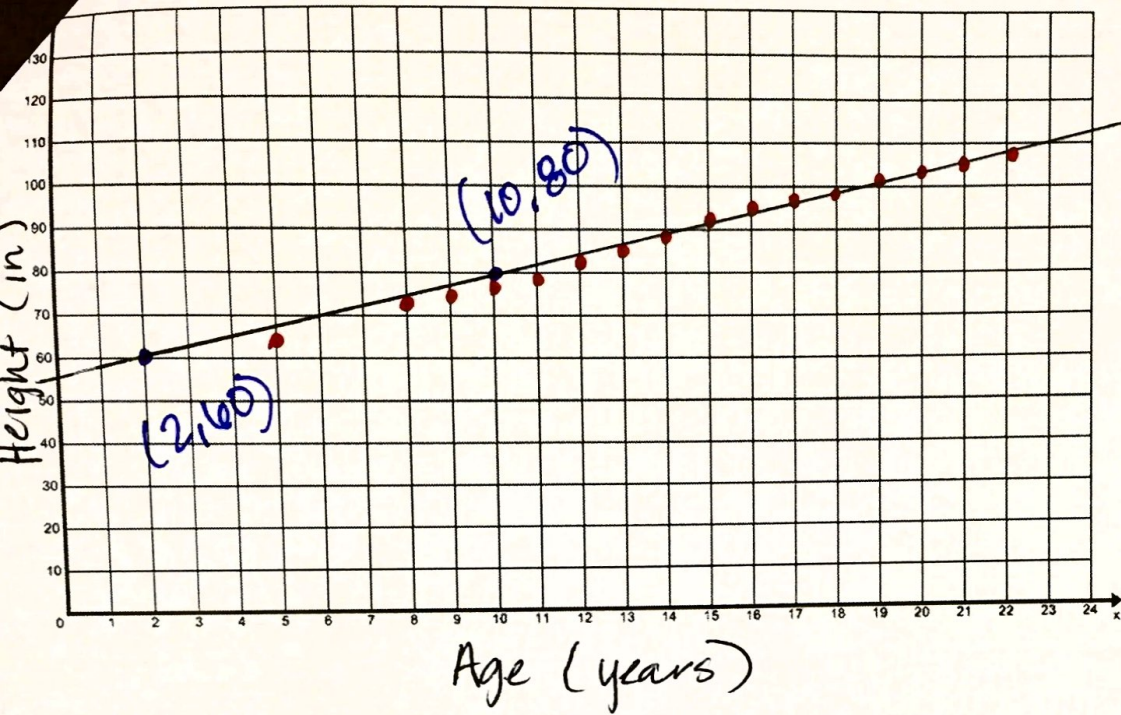
Wadlow died at 1:30 a.m. on July 15, 1940, in a hotel in Manistee, Michigan, as a result of a septic blister on his right ankle caused by a brace, which had been poorly fitted only a week earlier. He was buried in Oakwood Cemetery, Alton, in a coffin measuring 3.28 m (10 ft 9 in) long, 81 cm (32 in) wide and 76 cm (30 in) deep.

Tallest Man Data

Age in years	Height in inches
5	64 <i>5.3 ft</i>
8	72
9	74.5
10	77
11	79 <i>6.6 ft</i>
12	82.5
13	85.75
14	89 <i>7.4 ft</i>
15	92
16	94.5
17	96.5
18	99.5
19	101.5
20	102.75
21	104.25
22.4	107.1



Robert next to his father



Age in years	Height in inches
5	64
8	72
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18	99.5
19	101.5
20	102.75
21	104.25
22.4	107.1

1. Write an appropriate title at the top of the graph.

2. Label the x and y axis.

- age in years
- height in inches

3. Plot the data on the graph.

4. Draw the line of best fit.

5. Use two appropriate points to estimate the equation of the line of best fit.

$$(2, 60) \quad (10, 80) \quad \frac{80 - 60}{10 - 2} = \frac{20}{8} = 2.5 \text{ in. per year}$$

6. Now your teacher will demonstrate how technology will calculate a prediction. Pay attention! Write down the equation.

$$y = 2.5x + 55$$

7. How tall would Robert have been at 25 years?

$$y = 2.5(25) + 55$$

$$y = 117.5 \text{ in} \quad 9.8 \text{ ft}$$

8. How tall would Robert have been at 40 years?

$$y = 2.5(40) + 55$$

$$y = 155 \text{ in} \quad 12.9 \text{ ft}$$

9. a. How tall was he according to the line of best fit when he was born?

$$y = 2.5(0) + 55$$

$$y = 55 \text{ in} \quad 4.6 \text{ ft}$$

b. How is this represented in the equation?

c. How is it represented in the graph?

d. Does this make sense?

e. What limitations does our line of best fit have?