

The table below compares participants' actual age and the age that How-Old.net predicted that they were.

1. Choose and list *at least 6* points from the data table.

(3,4) (14,23) (31,31)
(7,45) (20,23) (41,50)

X Y
Actual Age How-Old.net Age

* 3	4	✓
5	6	
* 7	45	✓
11	10	
* 14	23	✓
15	34	
* 20	23	✓
* 31	31	✓
* 41	50	✓
49	39	

Why did you choose these points?

I CHOSE POINTS THAT INCLUDED BOTH BIG & SMALL DIFFERENCES

2. Plot the points you chose in #1. Clearly label your axes.
3. Define the x and y-values:

x: ACTUAL AGE y: ESTIMATED AGE

4. Next, estimate a "line of best fit" for your data points and draw it on your graph.

Why is your line a good fit to your graph?

I FOLLOWED THE GENERAL TREND OF THE DATA. THREE POINTS ARE CLOSE/ON THE LINE, ONE IS ABOVE, ONE IS BELOW, ONE IS MUCH DIFFERENT THAN THE OTHERS!

5. Find the gradient (slope) of your line. Choose two points ON THE LINE and show work.

(^{x₁}25, ^{y₁}30) (^{x₂}40, ^{y₂}50)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{50 - 30}{40 - 25} = \frac{20}{15} = \frac{4}{3}$$

- a) Interpret the meaning of the gradient by answering questions below:

What does your gradient represent in this situation?

YOUR ESTIMATED AGE INCREASES BY 4 YRS FOR EVERY 3 YRS OF ACTUAL AGE.

What does it tell you about the data?

HOW-OLD.NET IS ESTIMATING TOO HIGH!

6. Use one point on your line and the gradient to write an equation. Show work.

$$y = mx + c$$
$$30 = \frac{4}{3}(25) + c$$
$$30 = \frac{100}{3} + c$$
$$-30 = -\frac{33.3}{3} + c$$

PT: (25, 30)
(ON LINE)

$$c = -3.3$$

$$y = \frac{4}{3}x - \frac{10}{3} \text{ OR } y = 1.3x - 3.3$$

7. Verify your equation by choosing a point from your data table to substitute into your equation. Chosen point: (20, 23)

$$y = \frac{4}{3}x - \frac{10}{3}$$
$$23 = \frac{4}{3}(20) - \frac{10}{3}$$
$$23 = \frac{80}{3} - \frac{10}{3}$$

$$23 = \frac{70}{3}$$

$$23 \approx 23.3$$

“How well does your equation represent your points?”

Using (20, 23), which was on my line & in the table, my equation generated a very close output.

8. Suppose your grandparent is 62 years old. What age will How-Old.net predict for your grandparent? Use your equation to estimate this answer.

$$y = \frac{4}{3}x - \frac{10}{3}$$
$$y = \frac{4}{3}(62) - \frac{10}{3}$$
$$y = 82.67 - 3.3$$

$$y \approx 79 \text{ YRS OLD}$$

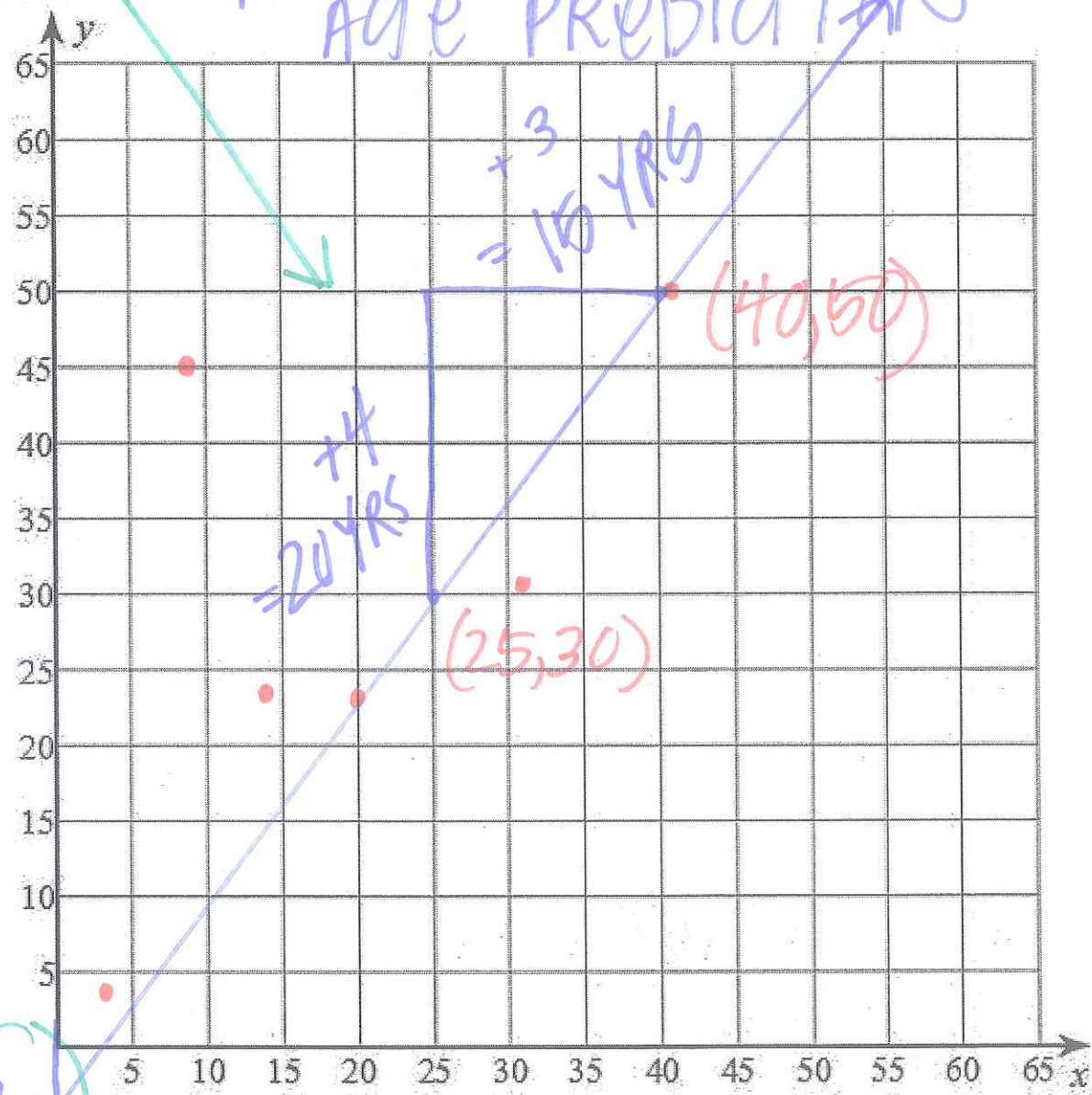
9. Defend whether this answer seems realistic or not.

Yes, this seems like a guess that this website would generate. ALMOST ALL the guesses are above the actual age in the original table. Referring back to the data assures an overestimation.

$m = \text{GRADIENT}$
 SLOPE

HOW-OLD.NET
AGE PREDICTION

ESTIMATED AGE



ACTUAL AGE

$C = Y\text{-INTERCEPT}$