

GW PS 8.3: Solving Linear Equations to Make Predictions

Name:

Group #

Solve

1) $-3(x - 4) = 2x + 2$

2) $-2(5x + 3) - (4x - 1) = 5(x + 2)$

3) $\frac{3x}{8} - \frac{1}{2} = 1$

4) $\frac{3}{8}t = \frac{5}{6}t - \frac{1}{4}$

5) $\frac{2}{5}x - 4 = 2x - \frac{3}{4}$

6) $\frac{2p+4}{3} - \frac{5p-7}{6} = \frac{11}{12}$

7) $8.25x - 17.56 + 4.38x = 25.86$

8) $-2.326 = \frac{x-50.92}{8.39}$

9) Let $f(x) = -3x + 7$.

(a) Find $f(2)$.

(b) Find x when $f(x) = 2$.

10) Let $f(x) = -5.85x + 183.22$.

(a) Find $f(17.28)$.

(b) Find x when $f(x) = 72.06$.

11) Houston taxis charge \$2.55 plus \$2.20 for each mile traveled.

(a) Define the variables that would describe the scenario.

(b) Find an equation of a linear model.

(c) How much would a 3.5-mile trip cost?

(d) If a person paid \$37.75, how far was the ride?

12) Boeing's 3rd quarter revenue for 2019 was \$19.98 billion, down 21% from the same quarter for 2018. What Was Boeing's 3rd quarter revenue for 2018?

13) Load the data set "Diamond Ring Prices," in StatCrunch. Let $p = f(c)$ be the price, in dollars, of a diamond ring with weight c , in carats. Build a scatterplot using Carats as the explanatory variable and Price as the response variable.

a) Describe the 4 characteristics of the association.

b) Graph the model $f(c) = 3671c - 251$ on the scatterplot. Does it come close to the data points?
(Options → edit. Overlay function of x: 3671*x-251)

c) Find $f(0.3)$. What does the answer mean?

d) Find c when $f(c) = 600$. What does this answer mean?

14) Use the tables to solve the equation $2x - 4 = -\frac{2}{5}x + 8$. Check your solution.

| Solutions of $y = 2x - 4$ | |
|---------------------------|-----|
| x | y |
| -1 | -6 |
| 0 | -4 |
| 1 | -2 |
| 3 | 2 |
| 5 | 6 |

| Solutions of $y = -\frac{2}{5}x + 8$ | |
|--------------------------------------|-----|
| x | y |
| -1 | 8.4 |
| 0 | 8 |
| 1 | 7.6 |
| 3 | 6.8 |
| 5 | 6 |