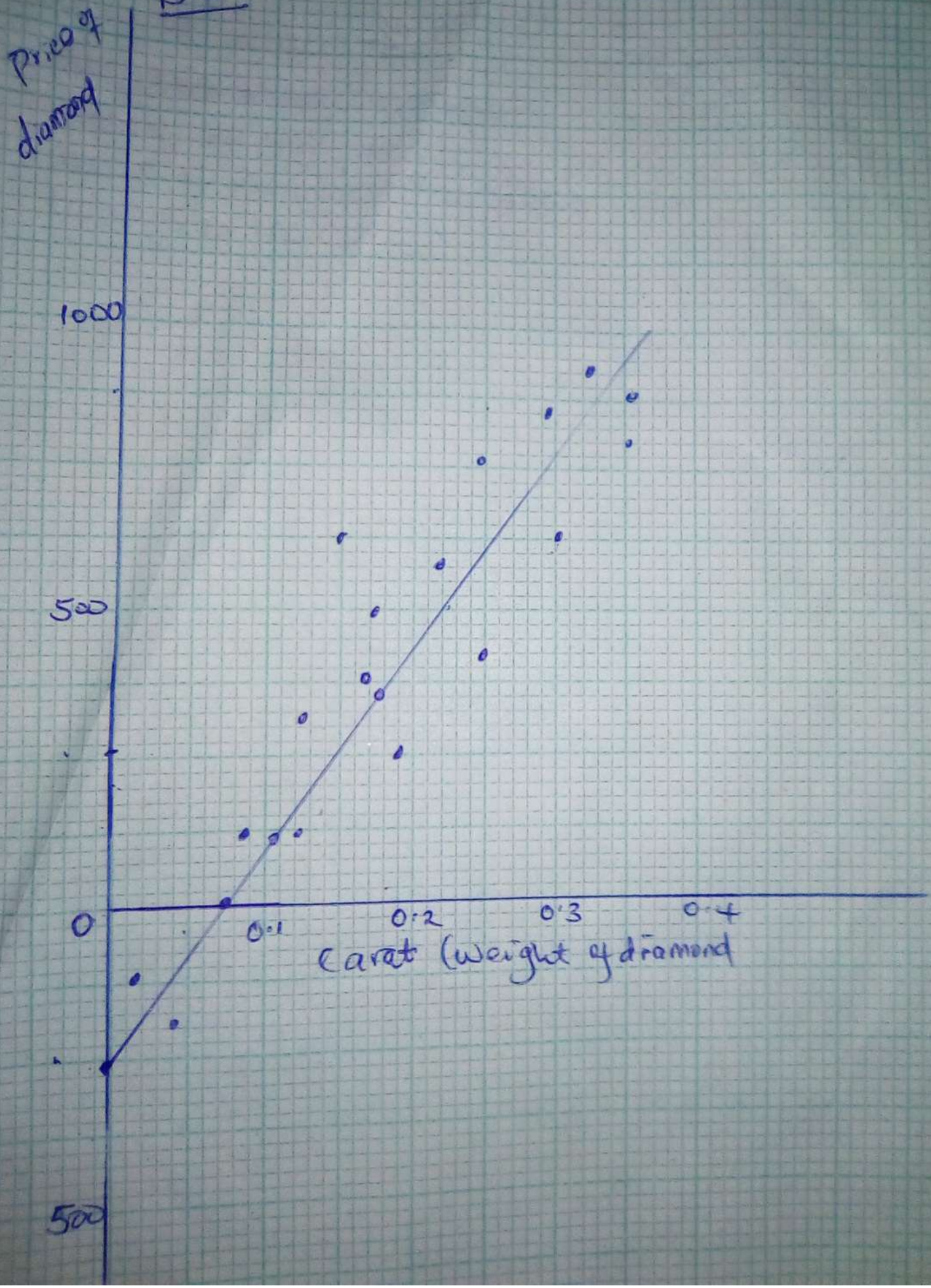
B b


Price of diamond
1000
500
0
0·1
0·2
0·3
0·4
Carat (weight of diamond
500

d.

$37.75 = 2.2x + 2.55$

$37.75 - 2.55 = 2.2x$

$\frac{35.2}{2.2} = \frac{2.2x}{2.2}$

$x = 16$ miles

12. 2019 – $ 19.98

$100 + 21 = 121$

$100\% = 19.98$

$121\% = \frac{121 \times 19.98}{100}$

$= 24.1758$

$= \$ 24.1758$

13

a) Here, we use regression analysis of regression to get the price of diamond.

- The price is the slope of the regression line of the least-square
- Weight of diamond (carat) is variable x (explanatory variable)
- Price of diamond, is the variable y (response variable)
- Therefore in this case, the relationship is a positive linear correlation.

b)

c) $f(0.3) = 3691c - 251$

$3691(0.3) - 251$

850.3

Price of 0.3 mass g diamond.

d) $600 = 3691c - 251$

$600 + 251 = 3691c$

$851 = 3691c$

$c = 0.2318$

Mass which has a price g 600

14.

$\frac{2}{5}x - 4 = \frac{2}{5}x + 8$

$2x - 4 = y$

$-\frac{2}{5}x + 8 = y$

$2x + \frac{2}{5}x = 8 + 4$

$5(2x) + \frac{2}{5}x(5) = 5 \times 12$

$10x + 2x = 60$

$12x = 60$

$x = 5$

$2(5) - 4 = y$

$y = 6$

$x = 5$

9

$8.25x - 17.56 + 4.38x = 25.86$

$(8.25 + 4.38)x = 25.86 + 17.56$

$12.63x = 43.42$

$x = 3.439$

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

$-19.5151 = x - 50.92$

$31.4049 = x$

9. a

$f(x) = -3x + 7$

$f(2)$

$f(2) = -3(2) + 7$

$= -6 + 7$

$= 1$

b

$2 = -3x + 7$

$2 - 7 = -3x$

$-5 = -3x$

$x = \frac{5}{3} = 1\frac{2}{3} = 1.6667$

10 (a) $f(x) = -5.85x + 183.22$

$f(17.28) = -5.85(17.28) + 183.22$

$-101.088 + 183.22$

82.132

(b)

$72.06 = -5.85x + 183.22$

$72.06 - 183.22 = -5.85x$

$-111.16 = -5.85x$

$x = 19.0$

11

(a)

$2.55 - is fixed amount, earned before the taxi starts the journey

$2.20 - Additional amount for each mile moved

b ~~$y = 2.20x + 2.55$~~

b $y = 2.20x + 2.55$

where y = total amount of money after x miles

x - distance moved in miles

(i) $y = 2.20(3.5) + 2.55$

$= 10.25$

$= \$10.25$

Group

1

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

$-3x+12 = 2x+2$

$12-2 = 2x+3x$

$10 = 5x$

$x = 2$

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

$-10x-6-4x+1 = 5x+2$

$-10x-4x-5x = 2+6-1$

$-19x = 7$

$x = -\frac{7}{19}$

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

LCM = 8

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

$3x - 4 = 8$

$3x = 12$

$x = 4$

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

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

$-\frac{11}{24}t = -\frac{1}{4}$

$t = -1 \times -\frac{24^{6}}{4_{1} \; 11}$

$t = \frac{6}{11}$

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

$\left(\frac{2x}{5}\right) \times 20 - 4 \times 20 = 2x \times 20 - \frac{3}{4} \times 20$

$8x - 80 = 40x - 15$

$8x - 40x = 80 - 15$

$-32x = 65$

$x = -\frac{65}{32}$

$x = -2\frac{1}{32}$

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

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

$8p+16-10p+14 = 11$

$8p-10p = 11-16+14$

$-2p = 9$

$p = -\frac{9}{2}$

$= -4.5$