

Penyelesaian Lengkap

PRAKTIS 6

Kertas 1

Bahagian A

1 (a) $m = \frac{9 - (-1)}{3 - (-3)} = \frac{5}{3}$

$$(x + y) = \frac{5}{3}x + c$$

Pada/At (3, 9),

$$(9) = \frac{5}{3}(3) + c$$

$$c = 4$$

$$\therefore (x + y) = \frac{5}{3}x + 4 \dots \textcircled{1}$$

$$y = \frac{5}{3}x + 4 - x$$

$$y = \frac{2}{3}x + 4$$

(b) Daripada/From $\textcircled{1}$,

$$(x + y) = \frac{5}{3}x + 4$$

$$(0) = \frac{5}{3}(p) + 4$$

$$p = -\frac{12}{5}$$

2 (a) $m = \frac{0.7 - 1.7}{0.5 - 0.1} = -2.5$

$$\frac{1}{y} = (-2.5)\frac{1}{x} + p$$

Pada/At (0.1, 1.7),

$$1.7 = (-2.5)(0.1) + p$$

$$p = 1.95$$

(b) $\frac{1}{y} = (-2.5)\frac{1}{x} + 1.95$

$$x = -2.5y + 1.95xy$$

$$x = y(1.95x - 2.5)$$

$$y = \frac{x}{1.95x - 2.5}$$

3 (a) $x^2y = 6x^2 - 2x$

$$y = 6 - \frac{2}{x}$$

$$y = -2\left(\frac{1}{x}\right) + 6$$

(b) (i) Kecerunan/Gradient = -2

(ii) Pintasan-y ialah 6.

The y-intercept is 6.

$$\therefore P(0, 6)$$

4 $nxy = px + pn$

$$y = \frac{p}{n} + \frac{p}{x}$$

$$y = p\left(\frac{1}{x}\right) + \frac{p}{n} \dots \textcircled{1}$$

Kecerunan/Gradient,

$$p = \frac{7 - 5}{6 - 2} = \frac{1}{2}$$

Daripada/From $\textcircled{1}$,

$$y = \left(\frac{1}{2}\right)\left(\frac{1}{x}\right) + \frac{1}{n}$$

$$y = \frac{1}{2}\left(\frac{1}{x}\right) + \frac{1}{2n}$$

Pada/At (2, 5),

$$5 = \frac{1}{2}(2) + \frac{1}{2n}$$

$$\frac{1}{2n} = 4$$

$$n = \frac{1}{8}$$

5 (a) $4y = (h + 2)x + \frac{20}{x}$

$$4xy = (h + 2)x^2 + 20$$

$$xy = \left(\frac{h + 2}{4}\right)x^2 + 5$$

$$\therefore k = 5$$

(b) $\frac{h + 2}{4} = -\frac{3}{2}$

$$h + 2 = -6$$

$$h = -8$$

6 (a) $y = 243n^x$

$$\log_3 y = \log 243n^x$$

$$\log_3 y = \log_3 3^5 + \log_3 n^x$$

$$\log_3 y = 5 \log_3 3 + x \log_3 n$$

$$\log_3 y = (\log_3 n)x + 5$$

(b) Pintasan-Y, $t = 5$

Y-intercept, $t = 5$

Kecerunan/Gradient

$$= \frac{t - 1}{0 - 2}$$

$$\log_3 n = \frac{5 - 1}{0 - 2}$$

$$\log_3 n = -2$$

$$n = 3^{-2} = \frac{1}{9}$$

7 $y = hx^3$

$$\log_2 y = \log_2 hx^3$$

$$\log_2 y = \log_2 h + 3 \log_2 x$$

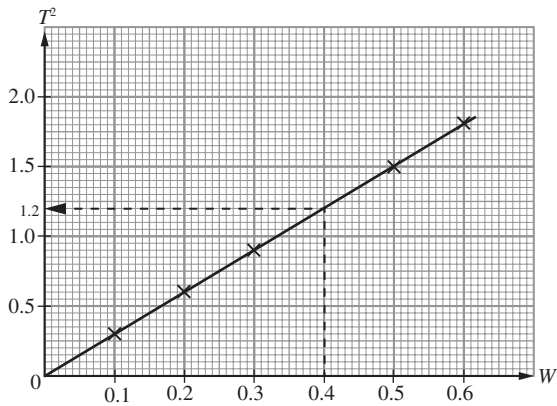
$$\log_2 y = 3 \log_2 x + \log_2 h$$

- (a) Kecerunan = 3
 Gradient = 3
 $\frac{p-4}{3-0} = 3$
 $p-4 = 9$
 $p = 13$
- (b) $\log_2 h = 4$
 $h = 2^4$
 $= 16$

Bahagian B

8 (a) $T = 2\pi \sqrt{\frac{W}{n}}$
 $T^2 = 4\pi^2 \times \frac{W}{n}$
 $T^2 = \frac{4\pi^2}{n} W$

W	0.1	0.2	0.3	0.5	0.6
T ²	0.30	0.61	0.90	1.51	1.82



- (b) (i) $\frac{4\pi^2}{n} = \frac{1.82 - 0.30}{0.6 - 0.1}$
 $\frac{4\pi^2}{n} = 3.04$
 $n = \frac{4 \times (3.142)^2}{3.04} = 13$
- (ii) Apabila/When $W = 0.4$,
 $T^2 = 1.2$
 $T = \sqrt{1.2}$
 $T = 1.1 \text{ s}$

Kertas 2

Bahagian A

1 (a) $m = -\frac{4}{6} = -\frac{2}{3}$

Persamaan garis lurus:
 Equation of straight line:

$$\frac{x}{y} = -\frac{2}{3}x^3 + 4$$

$$\frac{x}{y} = \frac{-2x^3 + 12}{3}$$

$$\frac{1}{y} = \frac{12 - 2x^3}{3x}$$

$$y = \frac{3x^3}{12 - 2x^3}$$

(b) $m = \frac{9-5}{4-2} = 2$

Kecerunan (3, 5) dan (0, c) ialah 2.
 Gradient of (3, 5) and (0, c) is 2.

$$\frac{c-5}{0-2} = 2$$

$$c-5 = -4$$

$$c = 1$$

Persamaan garis lurus:
 Equation of straight line:

$$x^2y = 2x + 1$$

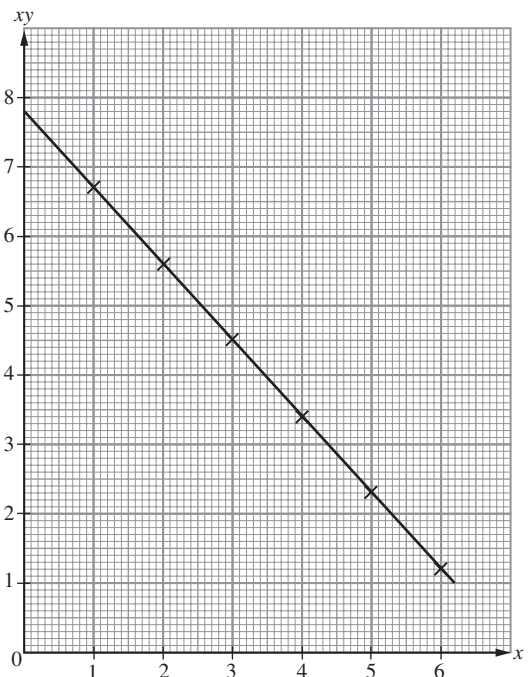
$$y = \frac{2}{x} + \frac{1}{x^2}$$

Bahagian B

2 (a)

x	1	2	3	4	5	6
xy	6.7	5.6	4.5	3.4	2.3	1.2

(b)



- (c) (i) Apabila/When $x = 2.5$,
 $xy = 5.1$

$$y = \frac{5.1}{2.5} = 2.04$$

- (ii) $y = h + \frac{k}{x}$
 $xy = hx + k$

Daripada graf, $k = 7.8$
 From the graph, $k = 7.8$

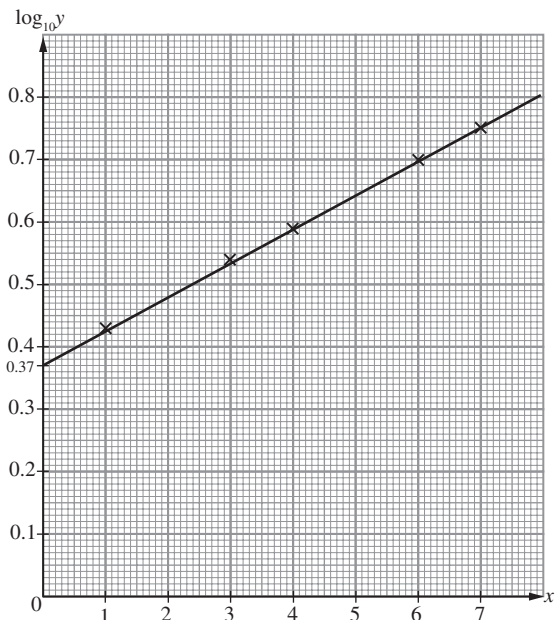
Kecerunan/Gradient

$$h = \frac{6.7 - 1.2}{1 - 6} = -1.1$$

3 (a)

x	1	3	4	6	7
$\log_{10} y$	0.43	0.54	0.59	0.70	0.75

(b)



(c) $y = AB^x$

$$\log_{10} y = \log_{10} AB^x$$

$$\log_{10} y = \log_{10} A + \log_{10} B^x$$

$$\log_{10} y = (\log_{10} B)x + \log_{10} A$$

$$\text{Kecerunan/Gradient} = \log_{10} B$$

$$\log_{10} B = \frac{0.75 - 0.43}{7 - 1}$$

$$\log_{10} B = 0.05333$$

$$B = 1.131$$

$$\text{Pintasan-}\log_{10} y = \log_{10} A$$

$$\log_{10} y\text{-intercept} = \log_{10} A$$

Daripada graf,

From the graph,

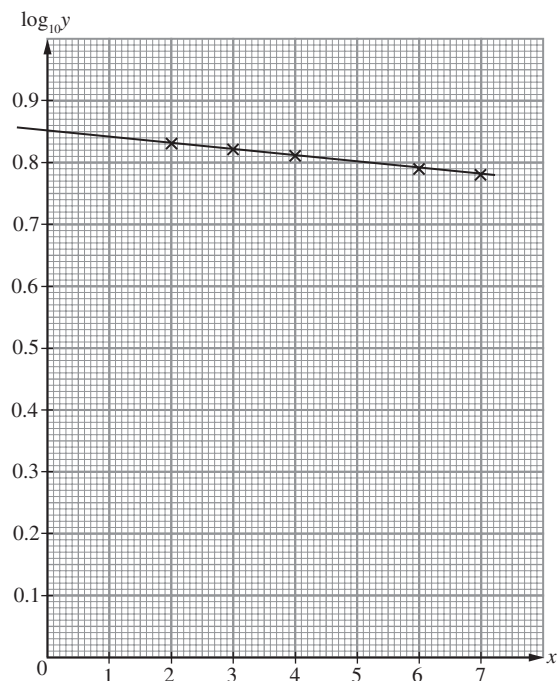
$$\log_{10} A = 0.37$$

$$A = 2.344$$

4 (a)

x	2	3	4	6	7
$\log_{10} y$	0.83	0.82	0.81	0.79	0.78

(b)



(c) $y = \frac{p}{n^x}$

$$\log_{10} y = \log_{10} \frac{p}{n^x}$$

$$\log_{10} y = \log_{10} p - x \log_{10} n$$

$$\log_{10} y = (-\log_{10} n)x + \log_{10} p$$

$$-\log_{10} n = \frac{0.78 - 0.83}{7 - 2}$$

$$\log_{10} n = 0.01$$

$$n = 10^{0.01} = 1.02$$

$$\text{Pintasan-}\log_{10} y = \log_{10} p$$

$$\log_{10} y\text{-intercept} = \log_{10} p$$

Daripada graf,

From the graph,

$$\log_{10} p = 0.85$$

$$p = 10^{0.85} = 7.08$$