

1.1

$$\begin{aligned} \text{a) } & \frac{2}{5} \times 4 + 3 \div (-5) \\ & = \frac{8}{5} - \frac{3}{5} = \frac{5}{5} = 1 \end{aligned}$$

$$\begin{aligned} \text{b) } & \sqrt{8} + \frac{6}{\sqrt{2}} \\ & = 2\sqrt{2} + 3\sqrt{2} = 5\sqrt{2} \end{aligned}$$

$$\begin{aligned} \text{c) } & 16x^3y^4 \div (-2xy)^2 \\ & = \frac{16x^3y^4}{4x^2y^2} = 4xy^2 \end{aligned}$$

$$\begin{aligned} \text{d) } & (\sqrt{3}-2)^2 - (\sqrt{3}+2)^2 \\ & = \{(\sqrt{3}-2) + (\sqrt{3}+2)\} \{(\sqrt{3}-2) - (\sqrt{3}+2)\} \\ & = 2\sqrt{3} \times (-4) = -8\sqrt{3} \end{aligned}$$

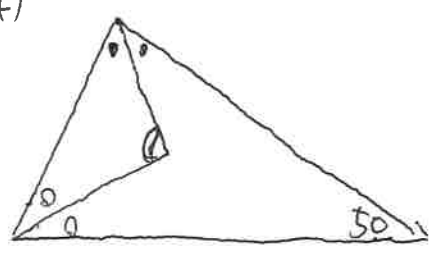
2.1

$$\begin{aligned} \text{a) } & (x+6)(x-1) \\ \text{b) } & 3(x^2 - 4y^2) \\ & = 3(x+2y)(x-2y) \end{aligned}$$

$$\begin{aligned} \text{c) } & \frac{3x-1}{2} + 4 = \frac{x}{3} \\ & 3(3x-1) + 24 = 2x \\ & 9x + 21 = 2x \\ & 7x = -21 \\ & x = -3 \end{aligned}$$

$$\begin{aligned} \text{d) } & x^2 + 6x - 5 = 0 \\ & x = -3 \pm \sqrt{9 - (-5)} \\ & = -3 \pm \sqrt{14} \end{aligned}$$

(4)



$$\begin{aligned} & \bullet x^2 + 0x^2 = 180 - 50 \\ & \quad = 130 \\ & \bullet 0 + 0 = 65 \\ & 180 - 65 = 115^\circ \end{aligned}$$

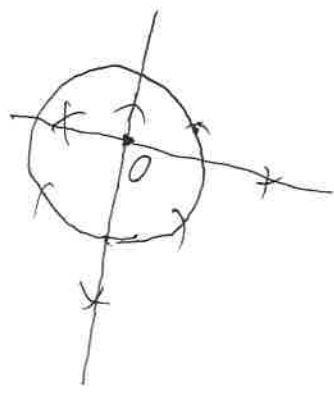
$$\begin{aligned} \text{5) } & (80 + 75 + 77 + 69 + a + 91 + 86 \\ & \quad + 60 + b + 72) = 750 \\ & a + b = 220 \\ & \quad \underline{140} \end{aligned}$$

b) \Rightarrow Area

$$\begin{aligned} \text{a) } & \frac{1}{3} \pi \cdot 3^2 \cdot 4 \\ & = 12\pi \end{aligned}$$

$$\begin{aligned} \text{b) } & \pi \cdot 5^2 \cdot \frac{3}{5} + \pi \cdot 3^2 \\ & = 15\pi + 9\pi \\ & = 24\pi \end{aligned}$$

c) 1



2

a	b
c	d

$$X = bc - ad$$

1	2	3	...	n

$$b = a + 1$$

$$c = a + n$$

$$d = a + n + 1$$

$$X = (a+1) \times (a+n) - a \times (a+n+1)$$

$$= a^2 + an + a + n - (a^2 + an + a)$$

2n

$$\text{e) } n=7, Y = a + b + c + d$$

$$\text{p) } b = a + 1$$

$$c = a + 7$$

$$d = a + 8 \text{ (2, 17)}$$

$$Y = a + (a+1) + (a+7) + (a+8) = 4a + 16 = 4(a+4)$$

$$Y = 16m$$

~~$$Y = a + (a+1) + (a+n) + (a+n+1) = 4a + 2n + 2 = 2(2a + n + 1) \approx 16m \text{ (integer)}$$~~

$$\text{or } Y = 4(a+4) = 16m$$

$$a+4 = 4m$$

$$1 \leq a \leq 6$$

$$a = 4$$

$$a = \frac{4m-4}{1} = 4m-4$$

17	33	45	7
7	89	11	1283
17	31	17	4920
34	17	4	142
17	48	18	49
		24	26

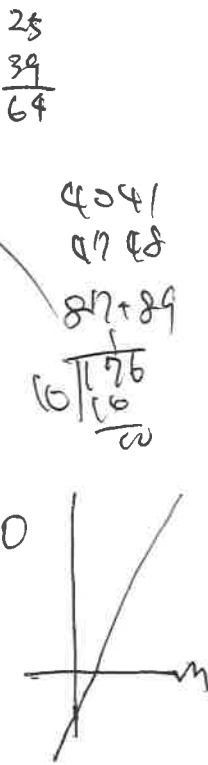
$$m = \frac{a+4}{4}$$

$$a = 4, 8, 12, \dots, 40$$

$$a = 4m - 4$$

$$m = 2, 3, 4, 5, 6, 7, \dots$$

$$11 - 2 + 1 = 10$$



3.

a ... 1, 2, 3, 4

b ... 1, 2, 3, 4

$x = a - b$

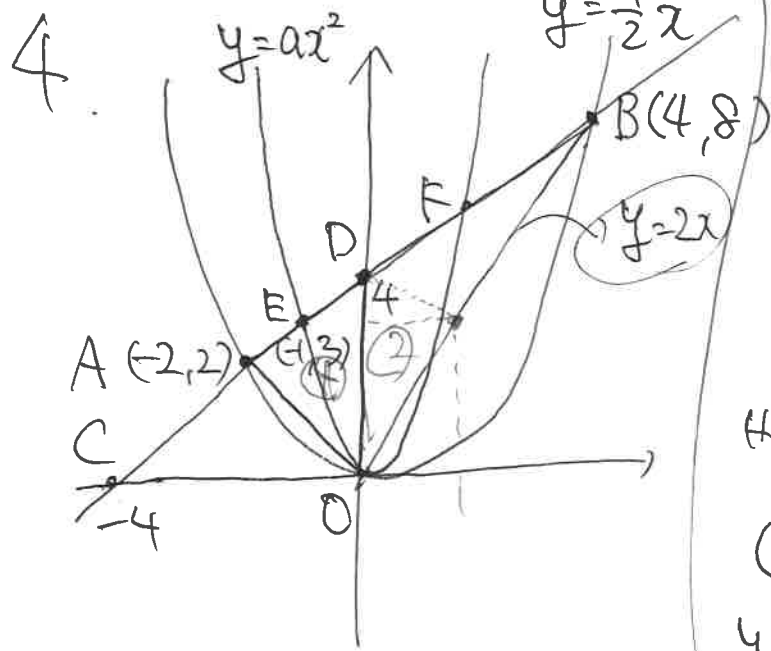
b \ a	1	2	3	4
1	0	1	2	3
2	-1	0	1	2
3	-2	-1	0	1
4	-3	-2	-1	0

v) $\frac{1}{4}$

B) $\frac{1}{16}$

B) $\frac{4}{16} = \frac{1}{4}$

A) $\frac{10}{16} = \frac{5}{8}$



v) $y = \frac{8-2}{4-(-2)}x + b$

$(-2, 2)$ 1st

$2 = \frac{6}{6} \cdot (-2) + b$

$b = 4$

$y = x + 4, (0, 4)$

2) $E(-1, 3)$

1) $12x = -1 \Rightarrow x = -1$

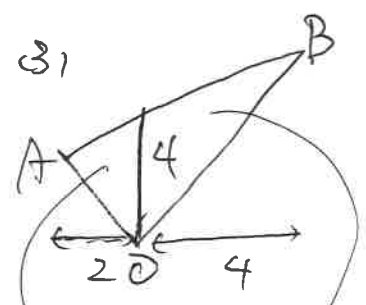
$y = -1 + 4 = 3 \therefore E(-1, 3)$

$y = ax^2$ 1st

$3 = a(-1)^2$

$3 = a$

$\therefore y = 3x^2$



$\frac{1}{2} \cdot 2 \cdot 4 + \frac{1}{2} \cdot 4 \cdot 4 = 12$

H) $\frac{1}{2} = 2$

$(0, 4), (1, 2)$

$y = -2x + 4$

5

$$\begin{array}{l}
 A \quad \begin{array}{l} 2x \\ \text{A} \end{array} \quad \begin{array}{l} 3y \\ \text{B} \end{array} \quad 41500 \text{ Ft} \\
 B \quad \begin{array}{l} 0.9 \\ \text{A} \end{array} \quad \begin{array}{l} -500 \\ \text{B} \end{array} \quad \begin{array}{l} 0.8 \\ \text{A} \end{array} \quad -7300
 \end{array}$$

$$\begin{array}{l}
 \text{A} \quad 0.9x \\
 \text{B} \quad y - 500 \quad \text{A} \quad 0.8(y - 500) \\
 \quad \quad \quad \quad \quad \quad \quad \quad 0.8y - 400
 \end{array}$$

$$\begin{array}{l}
 \text{R1} \quad \left\{ \begin{array}{l} 2x + 3y = 41500 \quad - \text{①} \\ 0.9x \times 2 + (0.8y - 400) \times 3 = 41500 - 7300 \quad - \text{②} \end{array} \right.
 \end{array}$$

② × 7

$$1.8x + 2.4y - 1200 = 34200$$

$$18x + 24y = 35400$$

$$3x + 4y = 5900 \quad - \text{②}'$$

$$22000$$

$$19500$$

$$\text{①} \times 3 - \text{②}' \times 2$$

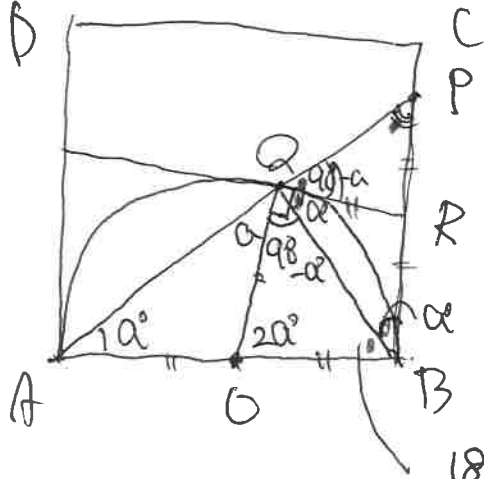
$$6x + 9y = 19500$$

$$x = 11000$$

$$y = 6500$$

$$\underline{\quad \quad \quad}$$

6



(2)

ア) $2\alpha^\circ$

イ) $90^\circ - \alpha$

ウ) 90°

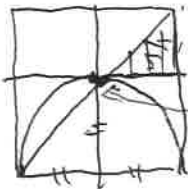
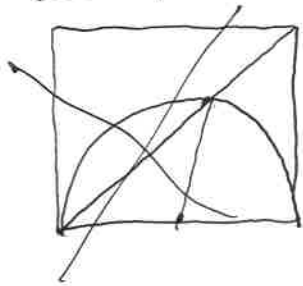
エ) $90 - (90 - \alpha) = \alpha^\circ$

オ) $180 - (2\alpha + 90 - \alpha) = 180 - (\alpha + 90) = 90 - \alpha^\circ$

$\frac{180 - 2\alpha^\circ}{2} = 90 - \alpha^\circ$

41 8倍

$= 90 - \alpha^\circ$ (ウ) $90 - \alpha^\circ$



正方形の中心

B)

ア

(オオ)

$\angle PQR = \angle APB = 90^\circ - \alpha^\circ$ (オオオオオオ)

よって $\triangle RPQ$ は \square の \triangle

ゆえに $RP = RQ$... ①

また $\angle BQR = \angle \angle OBR$ (オオオオ)

$\angle RBQ = 90^\circ - (90^\circ - \alpha)$

$= \alpha^\circ$

$\therefore \angle BQR = \angle RBQ = \alpha^\circ$

$\triangle RQB$ は \square の \triangle

$\therefore RQ = RB$... ②