

S2 Homework Set ①

CFE levels 3/4.

Set (A)

①  $3x(5x+2)$

$= 15x^2 + 6x$

②  $5.92 \times 33 + (2.52 \times 4.8^2)$

estimate  $6 \times 30 + (3 \times 5^2)$

$= 180 + 3 \times 25$

$= 180 + 75$

$= 255$

③  $P(3) = \frac{1}{8}$

Set (B)

①  $8d^4e \times 3de$

$= 24d^3e^2$

②  $3(3w-1) - 11 = 40$

$9w - 3 - 11 = 40$

$9w - 14 = 50$

$9w = 64$

$w = 6$

③ 9, 10, 10, 10, 12, 16, 24.

mean =  $\frac{9+10+10+10+12+16+24}{7}$

$= \frac{91}{7}$

$= 13$

$\frac{13}{7 \overline{)91}}$

mode = 10

In order so median 10

range =  $24 - 9 = 15$

### Set (C)

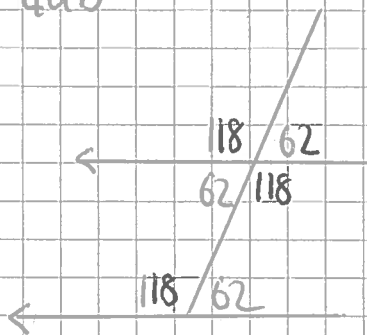
①

$$\begin{aligned} & 3\frac{3}{5} \times \frac{2}{3} \\ &= \frac{18}{5} \times \frac{2}{3} \\ &= \frac{12}{5} \\ &= 2\frac{2}{5} \end{aligned}$$

②

$$\begin{aligned} 8a+b &= 2a \\ &= 4ab \end{aligned}$$

③



$$\begin{aligned} 180 - 118 \\ &= 62^\circ \end{aligned}$$

### Set (D)

①

$$\begin{aligned} & (3\text{km})^3 \\ &= 27\text{k}^3\text{m}^3 \end{aligned}$$

②

$$4(p+2) = 2(p+6)$$

$$4p+8 = 2p+12$$

$$2p+8 = 12$$

$$2p = 4$$

$$p = 2$$

③

$$2.320$$

Set (E)

$$\begin{aligned} \textcircled{1} \quad & 7y(y^2 - z) \\ & = 7y^3 - 7yz \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 3.156 \times 600 \\ & = 18.936 \times 100 \\ & = 1893.6 \end{aligned}$$

$$\begin{array}{r} 3.156 \\ \times 6 \\ \hline 18.936 \end{array}$$

$\textcircled{3} \quad \frac{1}{8}$  left after making cake.

$\frac{1}{3}$  left after eating

$$\begin{aligned} & \frac{1}{3} \times \frac{1}{8} \\ & = \frac{1}{24} \text{ of bar is left.} \end{aligned}$$

# S2 Homework Set (2)

## Set (2A)

①  $x^2 - 5y^2 + 3x^2 + 5y^2 - 4x^2$   
 $= 0$

②  $-5x > 20$   
 $x < -4$

③ 107, 115, 208, 208, 302, 392  
mean  $\frac{107 + 115 + 208 + 208 + 302 + 392}{6}$   
 $= \frac{1332}{6}$   
 $= 222$

median 208

mode 208.

range  $392 - 107$   
 $= 285$

## Set (2B)

①  $24x^2y - 40y^2$   
 $= 8y(3x^2 - 5y)$

②  $2(8x + 1) < 3x + 2$   
 $16x + 2 < 3x + 2$   
 $13x + 2 < 2$   
 $13x < 0$   
 $x < 0$

③  $7\frac{5}{6} + 3\frac{1}{3}$   
 $= 10\frac{5}{6} + \frac{2}{6}$   
 $= 10\frac{7}{6}$

$$= 11\frac{1}{6}$$

Set (20)

$$\textcircled{1} \quad 3\frac{1}{2} + 4\frac{2}{7} + \frac{1}{28}$$

$$= 3\frac{14}{28} + 4\frac{8}{28} + \frac{1}{28}$$

$$= 7\frac{23}{28}$$

$$\textcircled{2} \quad -3a^2(2-5a^2)$$

$$= -6a^2 + 15a^4$$

$$\textcircled{3} \quad \text{each daughter got } \frac{1}{5}$$

$$\text{each son got } \frac{1}{3} \text{ of } \frac{1}{5}$$

$$= \frac{1}{15}$$

Set (21)

$$\textcircled{1} \quad (-5b^2) + (-11b^2)$$

$$= -16b^2$$

$$\textcircled{2} \quad 3(x-1) - 2(1-x) = 0$$

$$3x - 3 - 2 + 2x = 0$$

$$5x - 5 = 0$$

$$5x = 5$$

$$x = 1$$

$$\textcircled{3} \quad 8\frac{2}{3} - 5\frac{1}{2}$$

$$= 3\frac{4}{6} - \frac{3}{6}$$

$$= 3\frac{1}{6}$$

Set 2E

①

$$\begin{aligned} & 4x^2 - xy \\ & = 4x(-2)^2 - (-2) \times 3 \\ & = 4 \times 4 + 6 \\ & = 16 + 6 \\ & = 22 \end{aligned}$$

②

$$\begin{aligned} -36 & < -5y \\ 5y & < 36 \\ y & < \frac{36}{5} \end{aligned}$$

③

$$\begin{aligned} \text{total weight} & = 14 \times 2 \\ & = 28 \text{ kg} \\ \text{weight of chair} & = 28 - 15.6 \\ & = 12.4 \text{ kg} \end{aligned}$$

# S2 Homework Set ③

## Set 3A

①

$$7(2x-1) \leq 12x$$

$$14x - 7 \leq 12x$$

$$2x - 7 \leq 0$$

$$2x \leq 7$$

$$x \leq \frac{7}{2}$$

②

$$450 \div 500$$

$$= 450 \div 5 \div 100$$

$$= 90 \div 100$$

$$= 0.9$$

③

n.c.f of 27, 54, 63 is 9

factors of 27

1, 27

3, 9

factors of 54

1, 54

2, 27

3, 18

6, 9

factors of 63

1, 63

3, 21

7, 9

## Set 3B

②

let number =  $x$

$$3x - 3 = 25 - x$$

$$4x - 3 = 25$$

$$4x = 28$$

$$x = 7$$

①

$$3 \frac{2}{5} \div 1 \frac{3}{5}$$

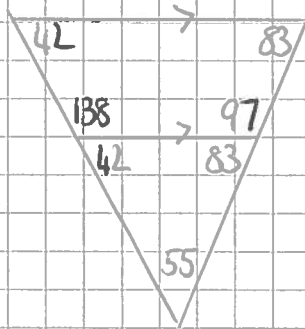
$$= \frac{17}{5} \div \frac{8}{5}$$

$$= \frac{17}{5} \times \frac{5}{8}$$

$$= \frac{17}{8}$$

$$= 2\frac{1}{8}$$

③



$$42 + 55$$
$$= 97^\circ$$

$$180 - 97^\circ$$

$$= 83^\circ$$

SF 3C

①  $4a^2b$

$$= 4 \times (-3)^2 \times 2$$

$$= 4 \times 9 \times 2$$

$$= 72$$

②  $10\frac{1}{5} - 6\frac{1}{3}$

$$= 4\frac{1}{5} - \frac{1}{3}$$

$$= 4\frac{3}{15} - \frac{5}{15}$$

$$= 4 - \frac{2}{15}$$

$$= 3\frac{13}{15}$$

③  $P(\text{eren}) = \frac{1}{2}$

SF 3D

①  $-(9p - q)$

$$= -9p + q$$



3D) cont.

$$\begin{aligned} \textcircled{2} \quad & \frac{2}{3} \text{ of } \left( \frac{1}{4} - \frac{1}{5} \right) \\ &= \frac{2}{3} \times \left( \frac{5}{20} - \frac{4}{20} \right) \\ &= \frac{2}{3} \times \frac{1}{20} \\ &= \frac{1}{30} \end{aligned}$$

$$\begin{array}{r} \textcircled{3} \quad 45.7 \\ \times 76 \\ \hline 2742 \\ 31990 \\ \hline 3473.2 \end{array}$$

2E) 3E

$$\begin{aligned} \textcircled{1} \quad & 2(5x+2) - 4(x-3) = x+36 \\ & 10x+4 - 4x+12 = x+36 \\ & 6x+16 = x+36 \\ & 5x+16 = 36 \\ & 5x = 20 \\ & x = 4. \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \left( \frac{3}{4} + \frac{1}{7} \right) \times \frac{4}{5} \\ &= \left( \frac{21}{28} + \frac{4}{28} \right) \times \frac{4}{5} \\ &= \frac{25}{28} \times \frac{4}{5} \\ &= \frac{5}{7} \end{aligned}$$

3E cont

③

2 hours 20mins

$$\frac{20}{60} = \frac{1}{3} = 0.\dot{3}$$

2. $\dot{3}$  hours.

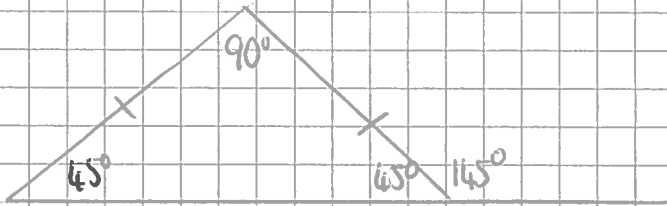
## S2 Homework Set 4

Set 4A

$$\begin{aligned}
 (1) \quad & 6 - 3(2x - 3y) - (2 - 3x + y) \\
 & = 6 - 6x + 9y - 2 + 3x - y \\
 & = 4 - 3x + 8y
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad & 8 \div 2 \frac{2}{3} \\
 & = 8 \div \frac{8}{3} \\
 & = 8 \times \frac{3}{8} \\
 & = 3
 \end{aligned}$$

(3)



Set 4B

$$\begin{aligned}
 (1) \quad & 3 \frac{1}{6} \times \frac{5}{19} \div \frac{1}{2} \\
 & = \frac{19}{6} \times \frac{5}{19} \times \frac{2}{1} \\
 & = 5
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad & (-3mn) - (-8mn) \\
 & = -3mn + 8mn \\
 & = 5mn
 \end{aligned}$$

$$\textcircled{3} \quad \text{exterior angle} = 360 \div 9 \\ = 40^\circ$$

Set (4C)

$$\textcircled{1} \quad 4(x-2) - x \leq -(16+x)$$

$$4x - 8 - x \leq -16 - x$$

$$3x - 8 \leq -16 - x$$

$$4x - 8 \leq -16$$

$$4x \leq -8$$

$$x \leq -2$$

$$\textcircled{2} \quad 0.02 \times (-0.04) \\ = -0.0008$$

$$\textcircled{3} \quad \text{total of 4 pupils} = 4 \times 15 \\ = 60$$

$$\text{total of 3 pupils} = 13 + 16 + 17 \\ = 46$$

$$\text{fourth pupil} = 60 - 46 \\ = 14 \text{ years.}$$

Set (4D)

$$\textcircled{1} \quad 24k^2h + 36kh^2 \\ = 12kh(2k + 3h).$$

$$\textcircled{2} \quad \left(3\frac{1}{2} + 2\frac{3}{4}\right) \times 1\frac{3}{5}$$

$$\begin{aligned}
&= \left(5 \frac{2}{4} + \frac{3}{4}\right) \times \frac{8}{3} \\
&= 5 \frac{5}{4} \times \frac{8}{3} \\
&= \frac{25}{4} \times \frac{8^2}{3} \\
&= \frac{50}{3} \\
&= 16 \frac{2}{3}
\end{aligned}$$

③ prime numbers 2, 3, 5, 7

$$\begin{aligned}
P(\text{prime}) &= \frac{4}{8} \\
&= \frac{1}{2}
\end{aligned}$$

Set 4E

①  $12r(s^2 + r)$

$$= 12rs^2 + 12r^2$$

②  $3b - 4a$

$$\begin{aligned}
&= 3 \times 2 - 4 \times (-3) \\
&= 6 + 12 \\
&= 18
\end{aligned}$$

③ 11.0, 13.7, 1.7, 8.4, 9.9, 13.7

In order 1.7, 8.4, 9.9, 11.0, 13.7, 13.7

$$\text{mean} = \frac{1.7 + 8.4 + 9.9 + 11.0 + 13.7 + 13.7}{6}$$

$$= \frac{58.4}{6}$$

$$= 9.73 \text{ (2d.p.)}$$

$$\begin{array}{r}
09.733 \\
6 \overline{) 58.400}
\end{array}$$

$$\text{median} \quad \frac{9.9 + 11.0}{2} = \frac{20.9}{2} = 10.45$$

$$\text{mode} \quad 3.7$$

$$\begin{aligned} \text{range} \quad & 13.7 - 1.7 \\ & = 12.0 \end{aligned}$$

# S2 Homework Set 5

## Set 5A

$$\begin{aligned} \textcircled{1} \quad & (-7ab)^2 \\ & = 49a^2b^2 \end{aligned}$$

$$\begin{array}{r} \textcircled{2} \quad 0.605 \\ \times 0.048 \\ \hline 4840 \\ 24200 \\ \hline 0.029040 \end{array}$$

$$\textcircled{3} \quad 180 + 25 = 205 \text{ mm}$$

(a) no

(b) yes

$$180 - 25 = 155 \text{ mm}$$

$$\begin{aligned} \textcircled{c} \quad & 17.56 \text{ cm} \\ & = 175.6 \text{ mm} \\ & \text{yes} \end{aligned}$$

$$\begin{aligned} \textcircled{d} \quad & 20.6 \text{ cm} \\ & = 206 \text{ mm} \\ & \text{no} \end{aligned}$$

## Set 5B

$$\begin{aligned} \textcircled{1} \quad & 2\frac{2}{3} \div \frac{4}{9} - 3\frac{1}{7} \\ & = \frac{8}{3} \times \frac{9}{4} - 3\frac{1}{7} \\ & = 6 - 3\frac{1}{7} \\ & = 2\frac{6}{7} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & b(a-b)^2 \\ & = 2((-3)-2)^2 \\ & = 2 \times (-5)^2 \\ & = 2 \times 25 \\ & = 50 \end{aligned}$$

- ③ l.c.m. 24 minutes  
time 9.24 am.
- 

Set (5C)

- ① let age of son =  $x$   
age of man =  $x + 24$

In 3 years time      son =  $x + 3$   
   man =  $x + 27$

$$3(x + 3) = x + 27$$

$$3x + 9 = x + 27$$

$$2x + 9 = 27$$

$$2x = 18$$

$$x = 9$$

son 9 years old

man 33 years old

②  $P(10) = 0$

③  ${}^2\sqrt{0.0049}$   
 $= \sqrt{49 \div 10000}$   
 $= 7 \div 100$   
 $= 0.07$

Set (5D)

①  $-w^2(vw + 1)$   
 $= -vw^3 - w^2$

② square numbers 1, 4, 9

$$P(\text{square number}) = \frac{3}{10}$$



③

$$\frac{2.95 \times 5.1^3}{4.56}$$

estimate

$$\frac{3 \times 5^3}{5}$$

$$= 3 \times 5^2$$

$$= 3 \times 25$$

$$= 75$$

Set 5E

①

$$3 \frac{5}{8} \div \frac{13}{16}$$

$$= \frac{29}{8} \div \frac{13}{16}$$

$$= \frac{29}{8} \times \frac{16}{13}$$

$$= 2$$

②

$$m \times n - 2m \times (-n)$$

$$= mn + 2mn$$

$$= 3mn$$

③

$$\text{total ages of seven} = 7 \times 22$$

$$= 154$$

$$\text{total ages of eight people} = 8 \times 29$$

$$= 232$$

$$\text{grans age} = 232 - 154$$

$$= \underline{\underline{78}}$$