

Question 1

see answer sheet.

Question 2

$$211 \quad -a^2b + 3ab^2 + 2ab^2 - 4ab^2 \quad (1)$$

$$a^2b - ab^2 \quad \sqrt{a}$$

$$212 \quad \begin{array}{l} 2(x+y) + 4(3x-2y) - 4(2x-3y) \\ 2x+2y + 12x-8y - 8x+12y \\ 6x+4by \quad \sqrt{a} \end{array} \quad (2)$$

$$213 \quad \begin{array}{l} (2a^2b^3)^2 (2a^{-2}b)^3 \\ 4a^4b^6 \cdot 8a^{-6}b^9 \\ 32a^4b^9 \cdot b \\ 32a^4b^{10} \\ 4a^{12}b^{10} \\ \sqrt[3]{68} \quad b^{\frac{10}{3}} \quad \sqrt{a} \end{array} \quad (4)$$

$$214 \quad \sqrt[3]{\frac{-27x^3}{64}} = -\frac{3x}{4} \sqrt[3]{a} \quad (2)$$

$$221. \quad \begin{array}{l} 5(x-2) = 3x-4 \\ 5x-10 = 3x-4 \\ 2x = 6 \\ x = 3 \end{array} \quad (3)$$

$$222 \quad \begin{array}{l} 3^{x-1} = 81 \\ 3^{x-1} = 3^4 \\ x-1 = 4 \\ x = 5 \end{array} \quad (3)$$

$$223 \quad \begin{array}{l} \frac{x}{3} + \frac{x}{4} = 1 \\ 4x + 3x = 12 \\ 7x = 12 \\ x = \frac{12}{7} \end{array} \quad \text{ved 12.} \quad (3)$$

$$23 \quad \begin{array}{l} x^2 - (2xy)^3 \\ (-1)^2 - (2(-1)(2))^3 \\ 1 - (-4)^3 \\ 1 - (-64) \\ 1 + 64 \\ 65 \end{array} \quad \begin{array}{l} x = -1 \\ y = 2 \end{array} \quad (3)$$

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### Question 3

3.1.1.  $\frac{20}{100} \times 50,000$   
 $= 10,000 \checkmark$

(2).

3.1.2.  $A = P(1 + i)^n$  (given)  
 $= 40,000(1 + 0.12 \times 3)^{\checkmark}_{sub}$   
 $= 54,400 \checkmark$

$\therefore$  Total paid back =  $254,400 + 10,000$   
 $= 264,400 \checkmark$  (4)

3.1.3.  $A = P(1 + i)^n$  (given)  
 $= 50,000(1 + 0.09 \times 3.5)^{\checkmark}$   
 $= 67,602,50 \checkmark$  (4)

3.1.4. Option ① - shorter period of time  
 and pay back less money (2).

3.2.1.  $\frac{Px}{R1} = \frac{5\$}{0.1923}$   
 $R1 = 5\$0.1923$

$\frac{x}{1} = \frac{1}{0.1923} \checkmark$  (1)  
 $x = 5,20 \checkmark$  (17).

3.2.2 a)  $\frac{x}{1} = \frac{550}{0.1923} \checkmark$  or  $550 \times 5,2 \checkmark$   
 $x = 2,860 \checkmark$  (2)  
 $= 2,860 \div 100 \checkmark$   
 $= 28 \checkmark$  DVD's round down

b)  $2,860 \div 100 \checkmark$  b)  $2,860 \div 100$   
 $= 28 \checkmark$  DVD's round down

### Question 4

4.1. 11,50  $\checkmark$  (2)

4.2. Add  $\checkmark$  0,25 to each number to get the next one. (2)

4.3.  $T_n = 25$   $T_n = 0,25n + 10$  (given)

$25 = 0,25n + 10$   
 $15 = 0,25n$   
 $60 = n \checkmark$  (3)

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### Question 5

5.1.1.  $C_1 = 20 \checkmark$  Alt vs DE || BC  $\checkmark$  (2)

5.1.2.  $D_3 + 68 + 20 = 180$  int l's of  $\checkmark$   
 $D_3 = 92 \checkmark$  (2)

5.1.3.  $\hat{A}DC + D_3 = 180$  l's on str line  $\checkmark$   
 $\hat{ADC} = 88 \checkmark$  (2)

5.1.4.  $\hat{A} = \hat{C}_2$  l's opp = sides.  
 $\therefore 180 = 88 + 2C_2$  int l's of  $\checkmark$   
 $92 = 2C_2 \checkmark$   
 $46 = C_2 \checkmark$

$\therefore C_3 + 46 + 20 = 180$  l's on str line  
 $C_3 = 114 \checkmark$  (or ext l of  $\checkmark$ ) (3)

## Question 6.

S.2. In  $\triangle MNO$  and  $\triangle PNO$ .  $\checkmark$  str  
 $OM = OP$  radii  $\checkmark$   
 $ON = ON$  common  $\checkmark$  str  
 $MN = NP$  given  $\checkmark$  str

$\therefore \triangle MNO \equiv \triangle PNO$  SSS.  $\checkmark$  str. (4)

S.3 In  $\triangle OPQ$  and  $\triangle OSR$ .  
 $O_1 = O_2$  vert opp.  $\checkmark$  str.  
 $P = S$  Alt  $\angle$ s  $PQ \parallel RS$ .  $\checkmark$  str.  
 $Q = R$  Alt  $\angle$ s  $PQ \parallel RS$ .  $\checkmark$  str.  
 (or  $\angle$ s of  $\Delta$ ).  
 $\therefore \triangle OPQ \parallel \triangle OSR$  AAA.  $\checkmark$  str. (4)

S.4.1.  $8x + 4 + 4x + 6 + 5x - 4 + x - 4 = 360$ .  
 int'l's of quad.  
 $18x = 360$   $\checkmark$   
 $x = 20$ .  $\checkmark$  (4)

S.4.2.  $T = 4(20) + 4$   
 $= 84$ .  $\checkmark$  str.

$$V = S(20) - 4$$

$$= 96$$

$\therefore T + V$   
 $84 + 96$   
 $= 180$   $\checkmark$  str.  
 $\therefore ST \parallel UV$   $\checkmark$  str.  
 $\therefore$   $\triangle$  int'l's are supp.

6.1.  $4^2 = x^2 + 2^2$   $\checkmark$   
 $16 = x^2 + 4$   $\checkmark$   
 $12 = x^2$   $\checkmark$   
 $3,46 = 2\sqrt{3} = x$   $\checkmark$  (3)

# Question 7

$$\begin{aligned} 7.12 & x(ay) - (y+ay) \\ &= x(ay) - (ay) \\ &= (ay)(x-1) \end{aligned}$$

$$\begin{aligned} 7.11 & 4x-12 \\ &= 4(x-3) \end{aligned}$$

$$7.21 \quad \frac{5(x-y)}{y-x}$$

$$\begin{aligned} &= \frac{5(x-y)}{-(x-y)} \\ &= -5 \end{aligned}$$

$$7.22 \quad \frac{x^2-3x-10}{x^2-25}$$

$$\begin{aligned} &= \frac{(x-5)(x+2)}{(x+5)(x-5)} \\ &= \frac{x+2}{x+5} \end{aligned}$$

$$7.23 \quad \frac{x^2+2x}{(x+2)(x-3)}$$

$$\begin{aligned} &= \frac{x^2}{(x+2)(x-3)} \cdot \frac{3x-9}{3(x-3)} \\ &= \frac{x^2}{(x+2)(x-3)} \cdot \frac{x^2}{x^2} \end{aligned}$$

$$7.24 \quad \frac{3}{x+1}$$

$$\begin{aligned} &= \frac{3}{x+1} \cdot \frac{x-1}{x-1} \\ &= \frac{3(x-1)}{(x+1)(x-1)} \end{aligned}$$

Name and Surname: Memo Grade: 10

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## ANSWER SHEET

### QUESTION 1

1.1.	A	B	C	D
1.2.	A	B	C	D
1.3.	A	B	C	D
1.4.	A	B	C	D
1.5.	A	B	C	D
1.6.	A	B	C	D
1.7.	A	B	C	D
1.8.	A	B	C	D
1.9.	A	B	C	D
1.10.	A	B	C	D