

一. 选择题(24分)

- | | |
|-------------------|-------------------|
| 1 [A] [B] [C] [D] | 5 [A] [B] [C] [D] |
| 2 [A] [B] [C] [D] | 6 [A] [B] [C] [D] |
| 3 [A] [B] [C] [D] | 7 [A] [B] [C] [D] |
| 4 [A] [B] [C] [D] | 8 [A] [B] [C] [D] |

1. B, 2. A, 3. D, 4. C.
5. D, 6. C, 7. B, 8. A

二. 填空题(30分)

- | | | | |
|-------------------------------|--------------|------------------------------------|-------------------------------------|
| 9 <u>7</u> | 10 <u>16</u> | 11 <u>$\frac{4}{7}$</u> | 12 <u>$1\frac{1}{2}$</u> |
| 13 <u>± 30</u> | 14 <u>50</u> | 15 <u>75</u> | 16 <u>$-\frac{1}{3}$</u> |
| 17 <u>1</u> | 18 <u>95</u> | | |

三. 解答题

19 $(-1)^{2020} + (3-\pi)^0 - (\frac{1}{2})^{-1} (a^2 a^4 + a^6 : a^2 - (-a^2)^3)$

$$= 1 + 1 - 2$$

$$= 0$$

$$= a^6 + a^6 + 8a^6$$

$$= 10a^6$$

$$6 \quad = (x-2y)^2$$

$$\begin{aligned} ② &= 4x(x-y) - (x-y) \\ &= (4x-1)(x-y) \\ &= (2x+1)(2x-1) \end{aligned}$$

$$\text{for } 0 < 2y$$

$$2x+4y=0 \quad ③$$

$$②-③ \text{ is}$$

$$x=6$$

$$\text{TA } x=6 \text{ is } 0 \text{ is}$$

$$x+6+2y=0$$

$$y=-3$$

$$\therefore \begin{cases} x=6 \\ y=-3 \end{cases}$$

$$\text{for } 0 < x \leq 0$$

$$\text{for } 0 < x < 1$$

$$\therefore x \leq 0$$

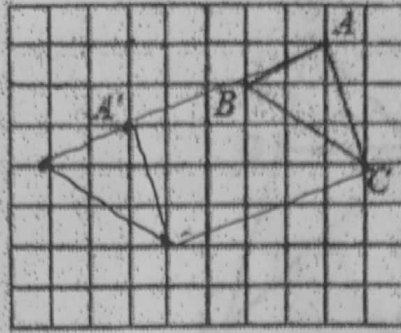
$$\begin{aligned} f &= 4x^2 + 4xy + y^2 - 9x^2 + 6xy - y^2 + 5x^2 - 5y^2 \\ &= 10xy - 5y^2 \end{aligned}$$

$$\text{for } x=1, \quad y=ny$$

$$f = 10 \times \frac{1}{2} \times 2 - 5 \times 2^2$$

$$= 10 - 20$$

$$= -10$$



$$\begin{aligned}
 S_{\triangle ABC} &= 3^2 - \frac{1}{2} \times 4 \times 2 - \frac{1}{2} \times 1 \times 3 - \frac{1}{2} \times 4 \times 3 \\
 &= 9 - 1 - 1.5 - 3 \\
 &= 3.5
 \end{aligned}$$

□ 面积相等.

²⁴ 神女大和尚人 小和尚 9人

$$\begin{cases}
 x + y = 100 & \text{①} \\
 2x + \frac{1}{3}y = 100 & \text{②}
 \end{cases}$$

解. $9x + y = 300$ ③

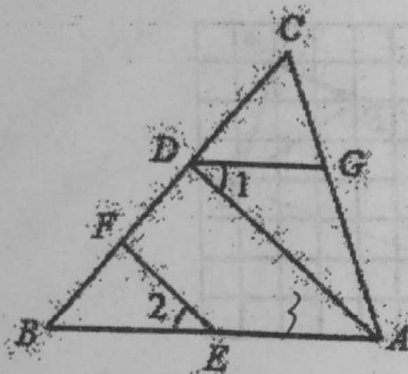
③ - ① $8x = 200$
 $x = 25$

代入 ① $x + y = 100$

$y = 75$

$\therefore \begin{cases} x = 25 \\ y = 75 \end{cases}$

大和尚 25人 小和尚 75人



Ans $\therefore \angle ADB = \angle CDB$

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$\therefore AD \parallel EF$

$\therefore \angle 1 = \angle 2$

$\therefore \angle CDB = \angle 2$

$\therefore AD \parallel EF$

$\therefore \angle 1 = \angle 2$

$\therefore \angle 1 = \angle 2$

$$4 \oplus 12 = 10^1 \times 10^3 = 10^4$$

$$4 \oplus 8 = 10^4 \times 10^8 = 10^{12}$$

2. 108

$$(2) (a \oplus b) \oplus c$$

$$= (10^a \times 10^b) \oplus c$$

$$= (10^{a+b}) \oplus c$$

$$= 10^{a+b} \times 10^c$$

$$= 10^{a+b+c}$$

$$a \oplus (b \oplus c)$$

$$= a \oplus (10^b \times 10^c)$$

$$= a \oplus 10^{b+c}$$

$$= 10^a \times 10^{b+c}$$

$$= 10^{a+b+c}$$

$$= 10^{a+b+c}$$

$$\therefore 10^{a+b+c} \neq 10^{a+b+c}$$

$$\therefore (a \oplus b) \oplus c \neq a \oplus (b \oplus c)$$

设 x 为 1300 元 y 为 1500 元

$$\begin{cases} x + y = 25 \\ 2x + y = 25 \end{cases}$$

$$\therefore \begin{cases} x = 0.5 \\ y = 1.5 \end{cases}$$

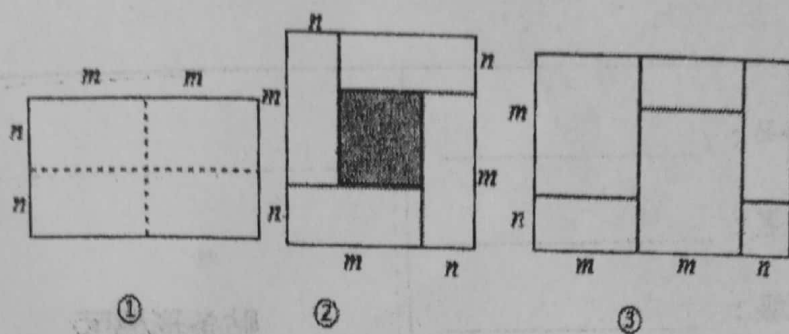
\therefore 设 x 为 1300 元 y 为 1500 元

(2) 设 x 为 1300 元 y 为 1500 元

$$0.5x + 1.5y = 25$$

$$x \geq 15$$

\therefore 设 x 为 1300 元 y 为 1500 元



① $m - n$

② $(m-n)^2$ $(m+n)^2 - 4mn$

③ $(m-n)^2 = (m+n)^2 - 4mn$

⑤ $m+n=6$ $mn=4$
 $\therefore m+n=6$ $mn=4$

$\therefore (m-n)^2 = (m+n)^2 - 4mn$
 $= 6^2 - 4 \times 4$
 $= 20$

⑥ $(m+n)(2m+n) = 2m^2 + 3mn + n^2$