

七年级下学期第一次月考考试数学试题

(120 分钟, 满分 150)

一、选择题 (12×4=48 分)

题号	1	2	3	4	5	6	7	8	9	10	11	12
答案	B	B	B	B	D	B	B	C	B	B	A	C

二、填空题 (6×4=24 分)

13. 2, 4 14. (0, 15) 15. 60

16. 如果两个角是同一角的补角, 那么这两个角相等 38.3 18. $\frac{1}{3}$

三、解答题 (共 78 分)

19. (本题 10 分) 计算:

$$(1) |\sqrt{2} - \sqrt{3}| + \sqrt[3]{8} + 2(\sqrt{3} - 1)$$

解: 原式 = $-\sqrt{2} + \sqrt{3} + 2 + 2\sqrt{3} - 2$

$$= -\sqrt{2} + 3\sqrt{3}$$

$$(2) (\sqrt{6})^2 + \sqrt{9} - \sqrt[3]{-8}$$

原式 = $6 + 3 - (-2)$

$$= 9 + 2$$

$$= 11$$

20. (本题 10 分) 求下列 x 的值:

解: (1) $4(3x+1)^2 - 1 = 0;$

$$(3x+1)^2 = \frac{1}{4}$$

$$3x+1 = \pm \frac{1}{2}$$

$$3x+1 = \frac{1}{2} \text{ 或 } 3x+1 = -\frac{1}{2}$$

$$\therefore x = -\frac{1}{6} \text{ 或 } x = -\frac{1}{2}$$

(2) $\frac{1}{2}(x+3)^3 = 4$

$$(x+3)^3 = 8$$

$$x+3 = \sqrt[3]{8}$$

$$x+3 = 2$$

$$\therefore x = -1$$



扫描全能王 创建

21、(本题 10 分)

解: 设不同意小明的说法.

设长方形纸片的长为 $3x$ cm, 宽为 $2x$ cm. ($x > 0$)

由题意得 $3x \cdot 2x = 300$

$$6x^2 = 300$$

$$x^2 = 50$$

$$x = \pm \sqrt{50}$$

$$\because x > 0$$

$$\therefore x = \sqrt{50}$$

$$\therefore 3x = 3\sqrt{50}$$

$$\therefore \sqrt{50} > 7$$

$$\therefore 3\sqrt{50} > 21$$

即长方形的长大于 21 cm

$$\therefore \sqrt{400} = 20$$

\therefore 正方形的边长为 20 cm

$$\therefore 3\sqrt{50} > 20$$

\therefore 长方形纸片长大于正方形边长

\therefore 不能裁出.

22、(本题 12 分)

(1)

解: 由题意得

$$2a - 1 = 9, 3a + b - 9 = 8, 0 = 4.$$

$$\text{解得 } a = 5, b = -2, c = 4$$

$$\therefore a + 2b + c = 5 + 2 \times (-2) + 4 = 5$$

(2) 已知点 $P(2m+4, m-1)$, 请分别根据下列条件, 求出点 P 的坐标.

① 解: 由题意得

$$2m + 4 - 6 = m - 1$$

$$\therefore m = 1$$

$$\therefore 2m + 4 = 2 \times 1 + 4 = 6, m - 1 = 1 - 1 = 0$$

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

② 由题意得

$$2m + 4 = 2$$

$$\therefore m = -1$$

$$\therefore m - 1 = -1 - 1 = -2 \therefore P(2, -2)$$

③ 由题意得

$$|2m + 4| = |m - 1|$$

$$\therefore 2m + 4 = m - 1 \text{ 或 } 2m + 4 = -(m - 1)$$

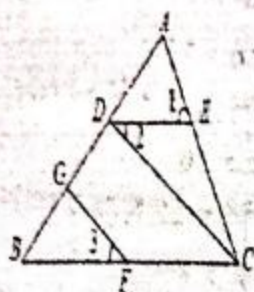
$$\therefore m = -5 \text{ 或 } m = -1$$

$$\text{当 } m = -5 \text{ 时 } 2m + 4 = 2 \times (-5) + 4 = -6 \therefore P(-6, -6)$$

$$\text{当 } m = -1 \text{ 时 } 2m + 4 = 2 \times (-1) + 4 = 2 \therefore P(2, -2)$$

综上所述 $P(-6, -6)$ 或 $(2, -2)$

23、(本题 10 分)



证明: $\because \angle 1 = \angle ACB$

$\therefore DE \parallel BC$

$\therefore \angle 2 = \angle DCB$

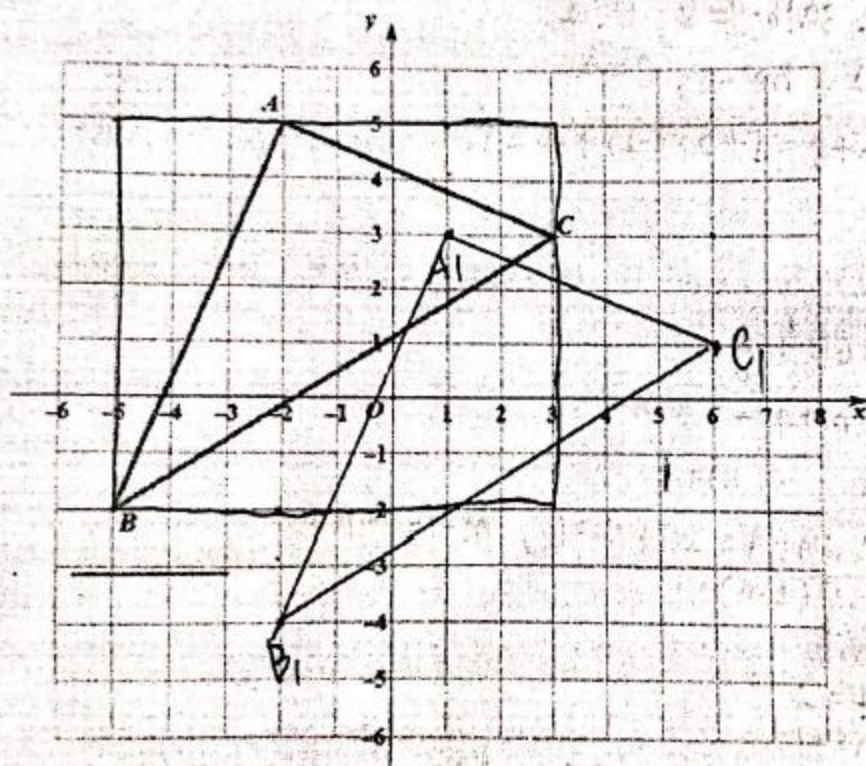
又 $\because \angle 2 = \angle 3$

$\therefore \angle DCB = \angle 3$

$\therefore DC \parallel GF$

$\therefore \angle BDC + \angle DGF = 180^\circ$

24、(本题 12 分)

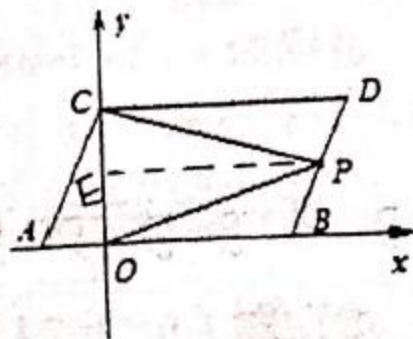
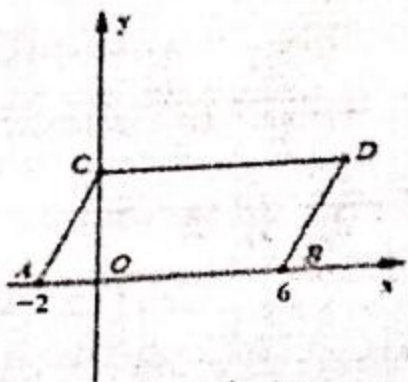


解: (1) $A(-2, 5)$ $B(-5, -2)$ $C(3, 3)$

$$\begin{aligned} (2) S_{\triangle ABC} &= 8 \times 7 - \frac{1}{2} \times 3 \times 7 - \frac{1}{2} \times 2 \times 5 - \frac{1}{2} \times 5 \times 8 \\ &= 56 - 10.5 - 5 - 20 \\ &= 20.5 \end{aligned}$$

(3) 如图所示 $\triangle A_1B_1C_1$ 即为所求

$A_1(1, 3)$, $B_1(-2, -4)$, $C_1(6, 1)$



4'

解: (1) 由题意可得 $C(-2+2, 0+4)$ $D(6+2, 0+4)$
即 $C(0, 4)$ $D(8, 4)$

(2) 由题意可知四边形ABDC为平行四边形.

$$\therefore S_{\text{四边形ABDC}} = AB \cdot OC = 8 \times 4 = 32$$

5' ①' - (2) 拓展.

设 $P(0, y)$

$$\therefore S_{\triangle PAB} = S_{\text{四边形ABDC}} = 32$$

④' - $\therefore \frac{1}{2} AB \cdot |y| = 32$

$$\therefore \frac{1}{2} \times 8 \times |y| = 32$$

$$\therefore |y| = 8$$

$$\therefore y = \pm 8$$

$$\therefore P(0, 8) \text{ 或 } P(0, -8)$$

⑤' - (3) 结论①正确.

过P点作 $PE \parallel AB$ 交y轴于E

由平移性质可得 $AB \parallel CD$

$$\therefore PE \parallel AB \parallel CD$$

$$\therefore \angle DCP = \angle CPE, \angle POB = \angle EPO$$

$$\text{又} \because \angle CPO = \angle CPE + \angle EPO$$

$$\therefore \angle CPO = \angle DCP + \angle POB \quad \therefore \frac{\angle DCP + \angle POB}{\angle CPO} = 1$$