

江岸区 九 年级 上学期 期中考试答案 (第 1 页)

一、选择题:

1~5: A, C, D, C, A. 6~10: B, C, D, B, D

二、填空题:

11. $(-1, 4)$ 12. 1 13. 80 14. $(6+6\sqrt{2})$ 15. 0 16. $\frac{25}{4}\sqrt{3}$

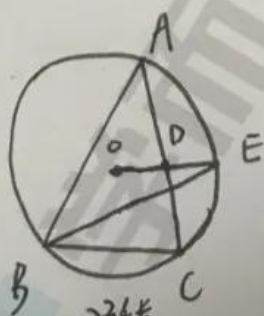
三、解答题:

17. 解: $(x+3)(x-2)=0$
 $\Rightarrow x_1=-3, x_2=2$

18. 解: $\frac{x(x-1)}{2}=45 \Rightarrow x=10$

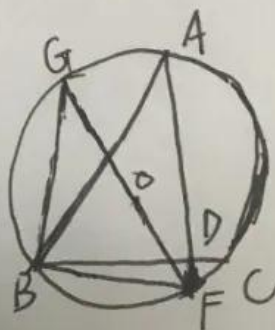
19. 证明: 设 AB, CD 交于点 P.
 $\therefore \triangle DPA \cong \triangle BPC$ (AAS)
 $\therefore AP=CP, DP=BP$
 $\therefore AB=CD$.

20. (1)



如图: 连 OD 交圆于点 E
 连 BE 即为所求

(2)



如图: 连 AD 并延长交圆于点 F.
 连 OF, BF, 延长 FO 到 G
 则 $\angle OFB = 48^\circ$
 $\triangle GBF$ 即为所求

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江岸区 九年级 上学期 期中考试答案 (第 2 页)

21. (1) $-24 \leq y \leq 1$

(2) $-1 \leq x \leq 0$ 或 $4 \leq x \leq 5$

(3) 令 $\frac{m+m+1}{2} = 2 \Rightarrow m = \frac{3}{2}$

\therefore 1° 当 $m < \frac{3}{2}$ 时, $y_1 < y_2$; 2° 当 $m = \frac{3}{2}$ 时, $y_1 = y_2$; 3° 当 $m > \frac{3}{2}$ 时, $y_1 > y_2$.

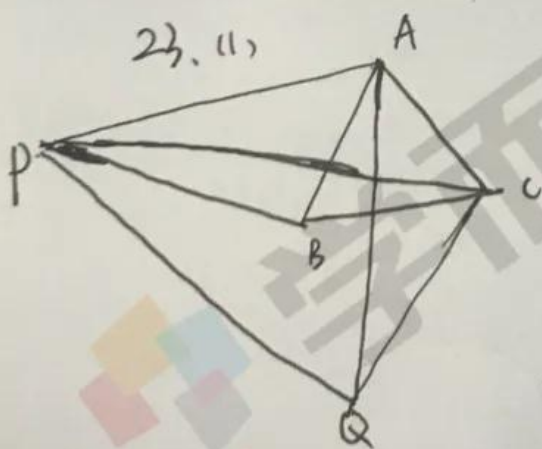
22. (1) $y = (x+60-40) \cdot (300-10x)$

$\therefore y = -10x^2 + 100x + 6000$

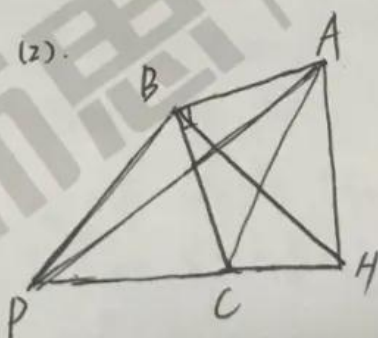
(2) $y = -10(x-5)^2 + 6250 \therefore$ 第5天时, $y_{\max} = 6250$ 元

(3) 令 $-10(x-5)^2 + 6250 \geq 5440 \Rightarrow -4 \leq x \leq 14$

又: $1 \leq x \leq 30 \therefore 1 \leq x \leq 14$ 共有14天满足题意



如图:



如图: 作 $BH \perp BP$ 交 PC 延长线于点 H , 连 AH

$\therefore \angle BPC = 45^\circ$

$\therefore BP = BH$

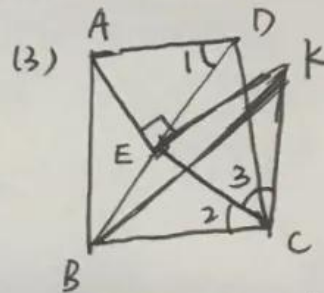
$\therefore \triangle BPC \cong \triangle BHA$ (SAS)

$\therefore AH = PC, \angle AHB = \angle CPB = 45^\circ$

$\therefore AH \perp PH$

$\therefore S_{\triangle APC} = \frac{1}{2} \cdot PC \cdot AH = \frac{1}{2} PC^2 = 4.5$

$\therefore PC = 3$



如图: 作 $EK \perp EA, EK = EA$

$\Rightarrow \triangle AED \cong \triangle KEC$ (SAS)

$\therefore AD = CK = 3, \angle 1 = \angle 3$

$\therefore AD \parallel BC$

$\therefore \angle 1 + \angle 2 + 45^\circ + 45^\circ = 90^\circ$

$\therefore \angle 1 + \angle 2 = \angle 2 + \angle 3 = 90^\circ$

$\therefore BK = \sqrt{3^2 + 4^2} = 5$

$\therefore \angle AEB = 135^\circ$

$\therefore \angle KEB = 135^\circ$

$\therefore \triangle AEB \cong \triangle KEB$ (SAS)

$\therefore AB = BK = 5$

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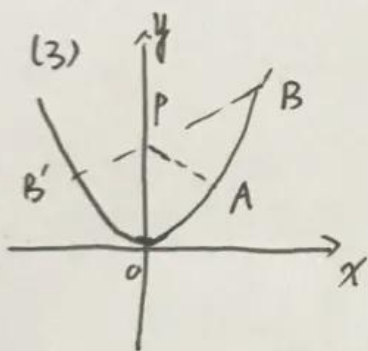
24. (1) $b=0, c=0$

(2) 易知: $P(m, m^2), N(m, 0), M(m, \frac{1}{2}m+2)$

$\Rightarrow PM = |m^2 - \frac{1}{2}m - 2|, PN = m^2$

$\Rightarrow 2|m^2 - \frac{1}{2}m - 2| = m^2 \Rightarrow x_1 = -1, x_2 = \frac{4}{3}, x_3 = \frac{1+\sqrt{17}}{2}, x_4 = \frac{1-\sqrt{17}}{2}$

又 $\because m > 0 \therefore m = \frac{1+\sqrt{17}}{2}$, 或 $m = \frac{4}{3}$



如图: 延长BP交C于点B'

$\because \angle APO = \angle BPQ$

$\therefore \angle B'PO = \angle APO$

$\therefore A, B'$ 关于对称轴y轴对称. $\Rightarrow \boxed{x_A + x_{B'} = 0}$

设 $l_{BB'}: y = kx + y_0, l_{BA}: y = tx + s$

$\Rightarrow \begin{cases} y = ax^2 \\ y = kx + y_0 \end{cases} \Rightarrow x_B \cdot x_{B'} = -\frac{y_0}{a} \quad \text{①}$

同理: $x_B \cdot x_A = -\frac{s}{a} \quad \text{②}$

①+② $\Rightarrow x_B \cdot (x_A + x_{B'}) = -\frac{1}{a} \cdot (s + y_0)$

$\Rightarrow s = -y_0$

$\therefore P$ 为定点.

$\therefore l_{AB}$ 过定点 $(0, -y_0)$.

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