2006年高考冲刺20天五套题

数学（北京卷）

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班 级

姓 名

座 号

密 封 线

2006 年普通高等学校招生全国统一考试

数学试题(一)

参考公式:

$A \quad B$

$P \quad A + B \quad = P \quad A \quad + P \quad B$ $\qquad S = 4\pi R^2$

$A \quad B$ $\qquad R$

$P \quad A \quad B \quad = P \quad A \quad P \quad B$

A $\qquad V = \frac{4}{3}\pi R^3$

$p \quad n$ $\qquad R$

$k \quad p_n \quad k \quad = C_n^{\ k} p^k \quad 1 - p \quad ^{n-k}$

一、选择题:本大题共 8 小题,每小题 5 分,共 40 分,在每小题给出的四个选项中,只有一项是符合题目要求的.

1. $A \quad B$ $\quad A - B = \quad x \mid x \ ! \ A \quad x \ " \ B$ $\quad M = \quad x \mid \mid x + 1 \mid \# \ 2 \quad x \ ! \ \mathbf{R}$ $\quad N = \quad x \mid x = \mid \sin \alpha \mid \quad \alpha \ ! \ \mathbf{R}$ $\quad M - N =$

A. $-3 \quad 1$ B. $-3 \quad 0$ C. $0 \quad 1$ D. $-3 \quad 0$

2. $f \quad x$ $\quad \mathbf{R}$ $\quad \frac{3}{2}\pi$ $\quad f \quad x \quad =$

$$\begin{cases} \cos x & -\frac{\pi}{2} \ \# \ x < 0 \\ \sin x & 0 \ \# \ x < \pi \end{cases} \qquad f \quad -\frac{15}{4}\pi$$

A. 1 B. 0 C. $\frac{\sqrt{2}}{2}$ D. $-\frac{\sqrt{2}}{2}$

3. $\alpha \ \beta \ \gamma$ $\quad l \ m$ $\quad l \ \$ \ m \quad \alpha \ \$ \ \gamma \quad \gamma \ \% \ \alpha = m \quad \gamma \ \% \ \beta = l$ $\quad$ ①$\beta \ \$ \ \gamma$. ②$l \ \$ \ \alpha$. ③$m \ \$ \ \beta$

A. ① ② B. ② ③ C. ① ③ D. ②

4. O $\quad A \quad 3 \quad 1 \quad B \quad -1 \quad 3$ $\quad C$ $\quad \overset{\&}{OC} = \alpha \ \overset{\&}{OA} + \beta \ \overset{\&}{OB}$ $\quad \alpha \ \beta \ ! \ R$ $\quad \alpha + \beta = 1$ $\quad C$

A. $3x + 2y - 11 = 0$ B. $x - 1 \ ^2 + \ y - 2 \ ^2 = 5$

C. $2x - y = 0$ D. $x + 2y - 5 = 0$

5. $1 - p$

4 3 2 2

1 1

4 2 p

A. $\frac{2}{3}$ 1　　B. $\frac{1}{3}$ 1　　C. 0 $\frac{2}{3}$　　D. 0 $\frac{1}{3}$

6. $y=f\ x$ **R** $x_1\neq x_2\ \lambda\neq-1$ $\alpha=\frac{x_1+\lambda x_2}{1+\lambda}$ $\beta=\frac{x_2+\lambda x_1}{1+\lambda}$.

$|f\ x_1\ -f\ x_2\ |<|f\ \alpha\ -f\ \beta\ |$

A. $\lambda<0$　　B. $\lambda=0$　　C. $0<\lambda<1$　　D. $\lambda\geq 1$

7. $F_1\ F_2$ $\frac{x^2}{4}-y^2=1$ P $\overrightarrow{PF_1}\ \overrightarrow{PF_2}=0$ $|\overrightarrow{PF_2}$

$|\ |\overrightarrow{PF_1}|$

A. 2　　B. $2\sqrt{2}$　　C. 4　　D. 8

O AB $y^2=2x$ $\overrightarrow{OA}\ \overrightarrow{OB}=$

A. $\frac{3}{4}$　　B. $-\frac{3}{4}$　　C. 3　　D. -3

8. 4 $A\ B\ C\ D$ $\overrightarrow{AB}\ \overrightarrow{AC}=0\ \overrightarrow{AC}\ \overrightarrow{AD}=0\ \overrightarrow{AD}\ \overrightarrow{AB}=0$

$S_{\Delta ABC}+S_{\Delta ACD}+S_{\Delta ADB}$ S

A. 8　　B. 16　　C. 32　　D. 64

二、填空题:本大题共 6 小题,每小题 5 分,共 30 分,把答案填在题中横线上.

9. $x\ y$ $\begin{cases}2x+y-2\geq 0\\x-2y+4\geq 0\\3x-y-3\leq 0\end{cases}$ $z=x^2+y^2$ ________.

10. $A_n^m=306\ C_n^m=153$ $\sqrt[3]{x}-\frac{1}{2x}$ ^{n} x^2 ________.

11. a_n $a_1+a_2+a_3=8\ a_1+a_2+\ \ +a_6=7$ $S_n=a_1+a_2+\ \ a_n$

$\lim\limits_{n\to\infty}S_n=$ ________.

a_n $a_1+a_2+a_3=8\ a_1+a_2+\ \ +a_6=7$ $q=$ ________.

12. $F_1\ F_2$ $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ F x

$A\ B$ $\triangle ABF_2$ e ________.

13. $y=f\ x$ D $x\in D\ f_1\ x\ =$ $f\ x\ \ f_2\ x\ =f\ f_1\ x\ \ f_n\ x\ =f\ f_{n-1}\ x\ \ n\geq 2\ n\in N$.

① $y=f\ x\ =\frac{1+x}{1-3x}$ $f_8\ 1\ =$ ________

② $y=f\ x$ $x_0\in D$ $f_1\ x_0\ \ f_2\ x_0$

$f_n\ x_0$ $f\ x\ =$ ________.

$y = \sin \quad -2x + \frac{\pi}{3}$ ________ ______.

14. $P \quad ABCD \quad a \quad * PAD \quad O_1$

$* PBC \quad O_2$ ________.

三、解答题:本大题共 6 小题,共 80 分,解答应写出文字说明、证明过程或演算步骤.

15. 13

$\vec{a} = \sin \alpha - x \quad 1 \quad \vec{b} = 1 \quad -\sin \alpha + x$

1 $x\ !\ R$ $\vec{a}\ \$\ \vec{b}$ α

2 $\sin 2\alpha = \frac{3}{5}$ $\alpha\ !$ $-\frac{3\pi}{4}\ \pi$ $f\ x = \vec{a} \quad \vec{b} + 2\cos\alpha$ $f\ x$ 0 $\cos\alpha$

.

16. 14

4 3 2 2 0

1 2 ξ .

1 ξ

2 ξ .

0.90 0.95 0.95

1

2 . 0.001

17. 13

$f\ x$ $-1\ 1$ $f\ x$ $g\ x$ $x = 1$ x !

2 3 $g\ x = a\ x - 2\ \ -2\ x - 2\ ^{3}\ a$.

1 $f\ x$

2 $f\ x$ 0 1 a

3 . a ! $-6\ 6$ $f\ x$ 4

.

18. 14

P $ABCD$ $ABCD$ PD \$

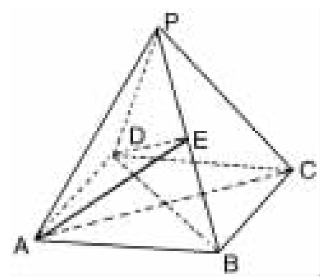
$ABCD$ $PD = AD$

1 PAC \$ PBD

2 PC PBD

3 PB E PC \$ ADE

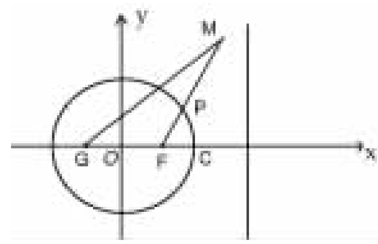
A ED B .



19. 13

F 1 0 l $x = 2$ P l

d $|PF| = \frac{\sqrt{2}}{2}d$ $\frac{2}{3} \# d \# \frac{3}{2}$.



1 P

2 $\overrightarrow{PF}$ $\overrightarrow{OF} = \frac{1}{3}$ $\overrightarrow{OP}$ $\overrightarrow{OF}$

3 G $\overrightarrow{GF} = 2\overrightarrow{FC}$ M $\overrightarrow{MP} = 3\overrightarrow{PF}$ MG

P $*PGF$.

20. 13

x_n 1 n S_n P_n x_n S_n

P_n $n = 1\ 2\ 3$ k $k\ '\ 0\ 1$

1 x_n

2 $y_n = \log x_n\ 2a^2 - 3a + 1$ $y_s = \frac{1}{2t +}$

$\frac{3}{2}$ $s\ t\ !\ N^+$ $s\ '\ t$ M $n > M$ $x_n > 1$

M .

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数学试题(一)参考答案

. 1. $B.$ $M = -3\ 1$ $N = 0\ 1$ $M - N$! M $M - N$ " N $M - N =$ $-3\ 0$.

2. $C.$ $f\ -\frac{15}{4}\pi\ = f\ -\frac{15}{4}\pi + 3 \times \frac{3}{2}\pi\ = f\ \frac{3}{4}\pi\ = \sin\frac{3}{4}\pi = \frac{\sqrt{2}}{2}.$

3. $D.$ $\begin{cases}\gamma\ \$\ \alpha\\ \gamma\ \%\ \alpha = m\\ l\ \$\ m\ \ l\ ,\ \gamma\end{cases}$ $\therefore l\ \$\ \alpha$ ②

① ③ $D.$

4. $D.$ $C\ x\ y$ $\because \overset{\&}{OC} = \alpha\ \overset{\&}{OA} + \beta\overset{\&}{OB}$ $\therefore\ x\ y\ = \alpha\ 3\ 1\ + \beta\ -1\ 3\ =\ 3\alpha\ \alpha\ +\ -\beta$ $3\beta\ =\ 3\alpha - \beta\ \alpha + 3\beta$ $\therefore\begin{cases}x = 3\alpha - \beta\\ y = \alpha + 3\beta\end{cases}$ $\alpha + \beta = 1. \therefore x + 2y - 5 = 0$

5. $B.$ p $C_4^3p^3\ 1 - p\ + p^4 > p^2$ $4p\ 1$ $-p\ + p^2 > 1$ $3p^2 - 4p + 1 < 0$ $\therefore \frac{1}{3} < p < 1.$

6. $A.$ $y = f\ x\ = x$ $|\ x_1 - x_2\ | < |\ \frac{x_1 + \lambda x_2}{1 + \lambda} - \frac{x_2 + \lambda x_1}{1 + \lambda}\ | = |\ x_1 - x_2\ |\ \ |\ \frac{1 - \lambda}{1 + \lambda}\ |$ $\therefore\ |\ \frac{1 - \lambda}{1 + \lambda}\ | > 1$ $\therefore \lambda < 0.$

7. A $\overset{\&}{PF_1}\ \overset{\&}{PF_2} = 0$ $\therefore PF_1\ \$\ PF_2.$ * PF_1F_2 $|\ PF_1\ | - |\ PF_2\ | = 2a$ $|\ PF_1\ |^2 + |\ PF_2\ |^2 - 2\ |\ PF_1\ |\ \ |\ PF_2\ | = 4a^2$①
$|\ PF_1\ |^2 + |\ PF_2\ |^2 = 4c^2$ ② ② − ① $2\ |\ PF_1\ |\ \ |\ PF_2\ | = 4b^2$ $b^2 = 1$
$\therefore\ |\ PF_1\ |\ \ |\ PF_2\ | = 2$ $A.$

$B.$ AB $A\left(\frac{1}{2}\ \ 1\right)$ $B\left(\frac{1}{2}\ \ -1\right).$ $\therefore\ \overset{\&}{OA} = \left(\frac{1}{2}\ \ 1\right)$ $\overset{\&}{OB} = \left(\frac{1}{2}\ \ -1\right).$ $\therefore\ \overset{\&}{OA}\ \ \overset{\&}{OB} = -\frac{3}{4}.$ $B.$

8. $C.$ $AB\ \ AC\ \ AD$ $AB^2 + AC^2 + AD^2 =\ \ 2r\ ^2 = 64$
$S_{\Delta ABC} + S_{\Delta ACD} + S_{\Delta ADB} = \frac{1}{2}AB \times AC + \frac{1}{2}AC \times AD + \frac{1}{2}AD \times AB\ \#\ \frac{AB^2 + AC^2}{4} + \frac{AC^2 + AD^2}{4} + \frac{AD^2 + AB^2}{4} = \frac{AB^2 + AC^2 + AD^2}{2} = 32$ $AB = AC = AD$.

9. $\frac{4}{5}$. z $2x+y-2=0$

10. -102. $C_n^m=153$ $A_n^m=306$ $n=18$ $T_{r+1}=C_{18}^r\ x^{\frac{1}{3}}\ ^{18-r}$ $-\frac{1}{2x}\ ^r=$ $-\frac{1}{2}\ ^r$

$C_{18}^r x^{6-\frac{4}{3}r}\therefore 6-\frac{4}{3}r=2\therefore r=3.\ T=\ -\frac{1}{2}\ ^3C_{18}^3=-102$

11. $\frac{64}{9}$. a_n q $a_1+a_2+a_3+\ \ +a_6=a_1+a_2+a_3+q^3\ \ a_1+$

$a_2+a_3\ =\ 1+q^3\ \ a_1+a_2+a_3\ =8\ \ 1+q^3\ =7\therefore q=-\frac{1}{2}\ \therefore a_1+a_2+a_3=a_1-$

$\frac{1}{2}a_1+\frac{1}{4}a_1=8\therefore \lim\limits_{n\to\infty}S_n=\frac{a_1}{1-q}=\frac{64}{9}$.

$-\frac{1}{2}$

12. $1<e<1+\sqrt{2}$. $A\left(-c\ \frac{b^2}{a}\right)$ $\angle AF_2F_1=\angle BF_2F_1$ $\triangle ABF_2$

$\angle AF_2B$. $\angle AF_2F_1<45°\ \therefore |AF_1|<|F_1F_2|\ \therefore\ \frac{b^2}{a}<2c$

$\therefore b^2<2ac\therefore c^2-a^2-2ac<0\ \therefore e^2-2e-1<0$ $e>1$ $\therefore 1<e<1+\sqrt{2}$.

13. ① 0 ② $\sin\pi x$ $-1\ ^x$ $f\ x\ =\ -1\ ^x\ x_0$ 0 $f\ x\ =\sin\pi x\ x_0$

0.5.

$x=\frac{k}{2}\pi-\frac{\pi}{12}\ k\in Z$ $k\pi+\frac{5\pi}{12}\ k\pi+\frac{11\pi}{12}$ $k\in Z$

$-2x+\frac{\pi}{3}=k\pi+\frac{\pi}{2}$ $k\in Z$ $x=\frac{k}{2}\pi-\frac{\pi}{12}$ $k\in Z$

$\because y=\sin\ -2x+\frac{\pi}{3}\ =-\sin\ 2x-\frac{\pi}{3}$. $\sin\ 2x-\frac{\pi}{3}$.

$\because 2k\pi+\frac{\pi}{2}\le 2x-\frac{\pi}{3}\le 2k\pi+\frac{3}{2}\pi\ k\in Z\ .\therefore x\in\ \ k\pi+\frac{5}{12}\pi\ k\pi+\frac{11}{12}\pi\ \ k\in Z$

14. a.

15. 1 $\because \vec{a}\ \ \vec{b}=0\ \sin\ \alpha-x\ -\sin\ \alpha+x\ =0\ \therefore\cos\alpha\ \ \sin x=0$ $\because x\in R\ \therefore\cos\alpha$

$=0\therefore \alpha=k\pi+\frac{\pi}{2}\ k\in Z$

2 $f\ x\ =-2\cos\alpha\ \ \sin x+2\cos\alpha=2\cos\alpha\ 1-\sin x\ \because f\ x$ $0\ \therefore\cos\alpha<0$

$\because \sin2\alpha=2\sin\alpha\ \ \cos\alpha>0\therefore\sin\alpha<0\ \therefore\alpha\in\ -\frac{3\pi}{4}\ -\frac{\pi}{2}$ $\therefore 2\alpha\in\ -\frac{3}{2}\pi\ -\pi$

$\therefore\cos2\alpha<0\therefore\cos2\alpha=-\frac{4}{5}\ \therefore\cos\alpha=-\sqrt{\frac{1+\cos2\alpha}{2}}=-\frac{\sqrt{10}}{10}$.

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16. ξ 0 1 2 3 4 $P\ \xi = 0 \ = \frac{C_4^2}{C_9^2} = \frac{1}{6}$

$P\ \xi = 1 \ = \frac{4 \times 3}{C_9^2} = \frac{1}{3}$ $P\ \xi = 2 \ = \frac{4 \times 2}{C_9^2} + \frac{C_3^2}{C_9^2} = \frac{11}{36}$

$P\ \xi = 3 \ = \frac{3 \times 2}{C_9^2} = \frac{1}{6}$ $P\ \xi = 4 \ = \frac{C_2^2}{C_9^2} = \frac{1}{36}.$

2 $E\xi = 0 \times \frac{1}{6} + 1 \times \frac{1}{3} + 2 \times \frac{11}{36} + 3 \times \frac{1}{6} + 4 \times \frac{1}{36} = \frac{14}{9}.$

$A\ B\ \ C$

1 $P\ A\ = 0.90$ $P\ B\ = P\ C\ = 0.95$ $p\ \bar{A}\ = 0.10$ $P\ \bar{B}\ = P\ \bar{C}\ = 0.05$

$A\ B\ C$ $P\ A\ \ B\ \bar{C}\ + P\ A\ \ \bar{B}\ \ C$

$+$

$P\ \bar{A}\ \ B\ \ C\ = P\ A\ \ P\ B\ \ P\ \bar{C}\ + P\ A\ \ P\ \bar{B}\ \ P\ C\ + P\ \bar{A}\ \ P\ B\ \ P\ C$

$= 0.176.$

2 $P\ \bar{A}\ \ \bar{B}\ \ C\ + P\ \bar{A}\ \ B\ \ \bar{C}\ + P\ A\ \ \bar{B}\ \ \bar{C}\ + P\ \bar{A}\ \ \bar{B}$

$\bar{C}\ = 0.012$

17. 1 $\because f\ x$ $g\ x$ $x = 1$ $\therefore f\ x\ = g\ 2 - x\ .$

$\therefore$ x ! $-1\ 0$ $2 - x$! $2\ 3$ $\therefore f\ x\ = g\ 2 - x\ = -ax + 2x^3$

$\because f\ x$ $\therefore x$! $0\ 1$ $-x$! $-1\ 0$ $\therefore f\ x\ = f\ -x\ = ax - 2x^3.$

$$\therefore f\ x\ = \begin{cases} -ax + 2x^3 & -1 \ \# \ x < 0 \\ ax - 2x^3 & 0 \ \# \ x \ \# \ 1 \end{cases}$$

2 $\because f\ x$ $0\ 1$ $\therefore f'\ x\ = a - 6x^2$ ($0.\therefore a$ ($6x^2$ $0\ 1$ $.\because x$! $0\ 1$ $6x^2$ # $6.\therefore a$ (6 a ! $6\ +\infty$.

3 $f\ x$ x ! $0\ 1$ $f'\ x\ = 0$ $x = \sqrt{\frac{a}{6}}$ $f\left(\sqrt{\frac{a}{6}}\right) = 4$ $a =$ 6 $x = 1$ a ! $-6\ 6$ $f\ x$ 4.

18. 1 $\because PD$ $ $ABCD$ $\therefore AC$ $ PD $\because$ $ABCD$ $\therefore AC$ $ BD AC , PBD $\therefore$ PAC $ $PBD.$

2 AC BD O PO 1 AC $ PBD $\therefore PC$ PBD PO

$\therefore$ - CPO PC PBD $\because PD = AD$ $\therefore$ Rt * PDC $PC = \sqrt{2}CD$

$ABCD$ $OC = \frac{1}{2}AC = \frac{\sqrt{2}}{2}CD$ $\therefore$ Rt * POC - $CPO = 30°$ PC PBD

$30°.$

3 PBD DE $ PO PB E AE PC $ ADE

1 AC $ PBD $\therefore AC$ $ DE PO AC O $\therefore DE$ $ PAC $\therefore DE$

$ PC　PD $　ABCD ∴ PD $ AD

∵ AD $ CD ∴ AD $　PCD ∴ AD $ PC ∴ PC $　ADE　O　OF $ DE

F　AF　AF $ DE　- OFA　A　ED　B

$PD = AD = a$

Rt * PDC　$OF = \frac{\sqrt{6}}{6}a$　$AO = \frac{\sqrt{2}}{2}a$ ∴　Rt * AOF　- OFA = 60°

A　ED　B　60°.

19. 1　P　x　y　∵ $\frac{|PF|}{d} = \frac{\sqrt{2}}{2} < 1$ ∴　P　F　1　0　l　$x = 2$

$$\begin{cases} e = \frac{c}{a} = \frac{\sqrt{2}}{2} \\ \frac{a^2}{c} - c = 1 \end{cases} \quad \begin{cases} a = \sqrt{2} \\ c = 1 \end{cases} \therefore b = 1 \quad \because \frac{2}{3} \# d \# \frac{3}{2}$$

$\therefore \frac{2}{3} \# |2 - x| \# \frac{3}{2}$　$\frac{2}{3} \# 2 - x \# \frac{3}{2} \therefore \frac{1}{2} \# x \# \frac{4}{3}$

∴ P　$\frac{x^2}{2} + y^2 = 1$　$\frac{1}{2} \# x \# \frac{4}{3}$

2　∵ &PF = 1 − x　− y　&OF = 1　0　&OP = x　y ∴ &PF　&OF = 1 − x　1 +　− y　0 =

$1 - x = \frac{1}{3}$

$\therefore x = \frac{2}{3}$　$\frac{x^2}{2} + y^2 = 1$　$y = \pm\frac{\sqrt{7}}{3}$. ∴ &OP = $\frac{2}{3}$　$\frac{\sqrt{7}}{3}$　&OP = $\frac{2}{3}$　$-\frac{\sqrt{7}}{3}$

∴ cos　&OP　&OF　= $\frac{\&OP \quad \&OF}{|\&OP|\ |\&OF|} = \frac{2\sqrt{11}}{11}$ ∴ &OP　&OF　arccos $\frac{2\sqrt{11}}{11}$

3　| &GF | = 2 | &FC | = 2 ∴ G

$$\because \begin{cases} |\&PG| = |\&PM| = 3|\&PF| \\ |\&PG| + |\&PF| = 2 \times \sqrt{2} \end{cases} \therefore \begin{cases} |\&PF| = \frac{\sqrt{2}}{2} \\ |\&PG| = \frac{3\sqrt{2}}{2} \end{cases}$$

∵ | &GF | = 2 ∴　$|\&PF|^2 + |\&GF|^2 = |\&PG|^2$. ∴ * PGF　Rt *

$\therefore S = \frac{1}{2}|\&GF| \times |\&PF| = \frac{\sqrt{2}}{2}$.

20. 1 ∵　P_n　P_{n+1}　k　∴ $\frac{S_{n+1} - S_n}{x_{n+1} - x_n} = k$　$k - 1$　$x_{n+1} = kx_n$ ∵ k ′

0　x_{n+1} ′ 1　x_n ′ 1 ∴ $\frac{x_{n+1}}{x_n} = \frac{k}{k-1} =$　∴ x_n　$\frac{k}{k-1}$　.

2 $1 < a < \frac{3}{2}$ $0 < 2a^2 - 3a + 1 < 1$ $\frac{1}{y_{n+1}} - \frac{1}{y_n}$ $\frac{1}{y_n}$

-2 $\therefore$ M $\begin{cases} \frac{1}{y_m} > 0 \\ \frac{1}{y_{m+1}} < 0 \end{cases}$

$\begin{cases} 2 \quad s + t \quad - 1 - 2 \quad M - 1 \quad > 0 \\ 2 \quad s + t \quad - 1 - 2 \quad M + 1 \quad < 0 \end{cases}$

$\therefore s + t - \frac{1}{2} < M < s + t + \frac{1}{2}$ $\because M$! N^+ $\therefore M = s + t$ $\therefore$ $n > M$ $\frac{1}{y_n}$ # $\frac{1}{y_{m+1}}$ # 0

$\because 0 < 2a^2 - 3a + 1 < 1$ $\therefore$ $n > m$ $x_n = 2a^2 - 3a + 1^{\frac{1}{y_n}} > 1$

$\therefore$ $M = s + t$ $n > m$ $x_n > 1.$

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数学试题(二)

参考公式:

A B

P A B $= P$ A $+ P$ B $S = 4\pi R^2$

A B R

P A B $= P$ A P B

A $V = \frac{4}{3}\pi R^3$

p n k

P_n k $= C_n^k p^k$ $1 - p$ $^{n-k}$ R

一、选择题:本大题共 8 小题,每小题 5 分,共 40 分,在每小题给出的四个选项中,只有一项是符合题目要求的.

1. z $2 + i$ $z = 1 + 2i$ z

A. B. C. D.

θ $\sin^4\theta + \cos^4\theta = \frac{5}{9}$ $\sin 2\theta$

A. $\frac{2\sqrt{2}}{3}$ B. $-\frac{2\sqrt{2}}{3}$ C. $\frac{2}{3}$ D. $-\frac{2}{3}$

2. f x $= x^2 - 4x + 3$ $M =$ x y | f x $+ f$ y # 0 $N =$ x y | f x $- f$ y (0 M % N

A. $\frac{\pi}{4}$ B. $\frac{\pi}{2}$ C. π D. 2π

3. ① l . α A ! l A " α

② a / b c $ a c $ b

③ a / b a / α b / α

④ a $ b a / α β $ b α / β.

A. ① ② B. ② ③ C. ② ④ D. ③ ④

4. F_1 F_2 $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ $a > 0$ $b > 0$ P

$\frac{|PF_2|^2}{|PF_1|}$ $8a$ e

A. 1 + ∞　　　　B. 0 3　　　　C. 1 3　　　　D. 1 2

5. $\overset{\&}{e}_1$ = 1 0 $\overset{\&}{e}_2$ = 0 1 　P P_0 −1 2 　$\overset{\&}{e}_1 + \overset{\&}{e}_2$

$|\overset{\&}{e}_1 + \overset{\&}{e}_2|$ 　Q Q_0 −2 −1

$3\overset{\&}{e}_1 + 2\overset{\&}{e}_2$ 　$|3\overset{\&}{e}_1 + 2\overset{\&}{e}_2|$ 　P Q 　$t = 0$

$\overset{\&}{PQ}$ \$ $\overset{\&}{P_0Q_0}$ 　t

A. 1　　　　B. 2　　　　C. 3　　　　D. 4

6. f x **R** 　x ! R 　f $x+6$ $= f$ x $+ f$ 3 　f 2 $= 1$

f 2006 =

A. 2006　　　　B. 2　　　　C. 1　　　　D. 0

7. $P - ABC$ 　M N 　PB PC 　AMN \$ 　PBC

A. $\frac{\sqrt{3}}{2}$　　　　B. $\sqrt{2}$　　　　C. $\frac{\sqrt{5}}{2}$　　　　D. $\frac{\sqrt{6}}{2}$

8. R 　f x $= \begin{cases} |\lg| x-1|| & x \ ' \ 1 \\ 0 & x = 1 \end{cases}$ 　x 　f^2 x $+ bf$ x $+ c =$

0 　7

A. $b < 0$ 　$c > 0$　　　　B. $b > 0$ 　$c < 0$

C. $b < 0$ 　$c = 0$　　　　D. b (0 　$c = 0$

二、填空题:本大题共 6 小题,每小题 5 分,共 30 分,把答案填在题中横线上.

9. $y = 2^{1-x} + 3$ 　x ! R 　________.

10. f' x_0 $= 2$ 　$\lim_{k \Theta 0} \frac{f\ x_0 - k \ - f\ x_0}{2k}$ = ________.

$\left(x^3 + \frac{1}{x^2}\right)^n$ 　6 　______.

11. R 　45° 　120° 　75° 　120°

________.

12. f x $= 2x^3 - 6x^2 + m$ 　m 　−2 2 　3 　m = ________.

−2 2 　________.

13. f x 　R 　$m > 0$ 　$|f\ x\ | \# m |x|$ 　x

f x 　F

①f x $= 0$ ②f x $= x^2$ ③f x $= \sqrt{2}$ $\sin x + \cos x$ ④f x $= \frac{x}{x^2 + x + 1}$ ⑤f x

R 　x_1 x_2 　$|f\ x_1\ - f\ x_2\ | \# 2|x_1 - x_2|$.

F 　________.

14. F_1 F_2 　C 　F_1 　F_2 　C

P 　C 　e 　$|P_1F_1| = $ e$|PF_2|$ 　e 　________.

三、解答题:本大题共 6 小题,共 80 分. 解答应写出文字说明,证明过程或演算步骤.

15. 13

* ABC - A - B - C a b c * ABC S_1

$\left(\tan\frac{C}{2}+\cot\frac{C}{2}\right)S = 18.$

1 ab

2 $c = 3\sqrt{2}$ - C .

16. 14

	0 ~ 5	6 ~ 10	11 ~ 15	16 ~ 20	21 ~ 25	25
	0. 1	0. 15	0. 25	0. 25	0. 2	0. 05

1 20

2 7 3 3 15 0. 75

17. 13

a_n n $S_n = \frac{1}{2} n^2 - n + 2$ b_n $b_1 = 1$ $b_n - b_{n-1} =$

$\frac{1}{2^{n-1}}$ n (2

1 a_n b_n

2 n n_0 n $a_n > 5b_n$.

18. 14

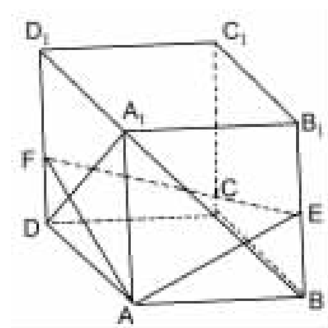
$ABCD - A_1B_1C_1D_1$ $\sqrt{3}$

3 E F BB_1 DD_1 $AE \ \$ \ A_1B$ $AF \ \$ \ A_1D$.

1 $A_1C \ \$$ AEF

2 $A - EF - B$

3 B_1 AEF .



19. 13 $\mathbf{R}$ $f\ x\ = ax^3 - 2bx^2 + cx + 4d\ \ a\ b\ c\ d \in \mathbf{R}$

$x = 1$ $f\ x$ $-\dfrac{2}{5}$.

1 $f\ x$

2 $x \in\ -1\ 1$

3 $x_1\ x_2 \in\ -1\ 1$ $|\ f\ x_1\ - f\ x_2\ | \le \dfrac{4}{5}$.

20. 13 $\dfrac{x^2}{a^2} - \dfrac{y^2}{b^2} = 1\ \ a > 0\ b > 0$ $A\ B$ $F\ c$

0 $c > 0$ $l\ x = \dfrac{1}{2}$ $|AF| = 3$. F $P\ Q$

PB l M .

Ⅰ

Ⅱ $\overrightarrow{OP}$ $\overrightarrow{OQ} = -17$ ΔPBQ S

Ⅲ $\overrightarrow{PF} = \lambda \overrightarrow{FQ}\ \ \lambda \ne 0\ \lambda \ne -1$ $\mu = f\ \lambda$ $\overrightarrow{AM} = \mu \overrightarrow{MQ}$.

$\mu = f\ \lambda$

$\overrightarrow{PF} = 2\overrightarrow{FQ}$ μ $\overrightarrow{AM} = \mu \overrightarrow{MQ}$. μ

.

班级

姓名

座号

密

封

线