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1 $A = x^2 + 4$ $B = x|x - 1|$ $A = B =$

A 1,2 B 0,1,2

C 2, 1,0,1,2 D 0

2 $z = 1 + i$ $\bar{z} =$

A. $1 + i$ B $1 - i$ C $1 - i$ D i

3 $a_n = a_1 + 4(a_5 - 12) = a_6$

A 13 B 14 C 15 D 16

$\alpha = (4 - 3) \sin(\alpha - \frac{\pi}{2})$ ()

A. $\frac{4}{5}$ B. $\frac{4}{5}$ C. $\frac{3}{5}$ D. $\frac{3}{5}$

5 $\triangle ABC$ A, B, C a, b, c $\sin A : \sin B : \sin C = 2 : 3 : 4$ $\cos C =$

A $\frac{2}{3}$ B $\frac{1}{3}$ C $\frac{1}{4}$ D $\frac{1}{4}$

6 $x^2 + y^2 - 2x - 4y - 4 = 0$

A $1, 2!, 3$ B $1, 2!, 3$ C $1, 2!, 2$ D $1, 2!, 3$

7 $f(x) = e^x \ln x$ $f'(x) =$

A $\frac{e^x}{x}$ B $e^x \frac{1}{x}$
 C $\frac{e^x x \ln x - 1!}{x}$ D $\frac{1}{x} \ln x$

8 $3x \frac{1}{x} = n \cdot N^*$ $16 = n$

A 2 B 3 C 4 D 5

9 $ABCD$ $A_1B_1C_1D_1$ E, F, G AD, BC, BB_1

C_1E, FG

10 A $\frac{\sqrt{2}}{6}$ B $\frac{1}{3}$ C $\frac{1}{6}$ D $\frac{\sqrt{2}}{3}$
 $C: y^2 = 8x$ F O M C $|MF| = 4$ $|OM| =$

11 A $2\sqrt{5}$ B $\sqrt{33}$ C $4\sqrt{2}$ D 4
 F_1, F_2 C: $\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$ $a > 0, b > 0$ $F_1 = x$
 A B $\angle AF_2B$ C

12 A $\frac{\sqrt{7}}{2}$ B $\frac{\sqrt{21}}{3}$ C $\sqrt{5}$ D $\sqrt{3}$
 $f(x) = a \ln x - x^2 - x - 1$ $f'(x) =$
 A 1, 1 B 0, 1 C 1, 3 D $\frac{1}{2}, 1$

13 $\vec{a} = (\log_2 3, \sin \frac{4}{3})$, $\vec{b} = (\log_3 8, m)$, $\vec{a} \perp \vec{b}$ $m =$
 A $2\sqrt{3}$ B $\sqrt{3}$ C $2\sqrt{3}$ D $3\sqrt{2}$

14 $f(x) = ae^x - \ln x$ $f'(1) = 2$ $a =$
 A e^2 B e C e^{-1} D e^{-2}

15 $f(x) = \cos(\omega x + \frac{\pi}{3})$ $1(\omega > 0)$ π $f(x)$ $[0, \frac{\pi}{2}]$
 ()
 A. $\frac{1}{2}$ B. 1 C. $\frac{3}{2}$ D. 2

16 A $X \sim N(3, 2^2)$ $P(X > 4) = 0.7$ $P(3 < X < 4) = 0.2$
 B 10 11 11 12 13 14 16 18 20 22 60 14
 C $|r| = 1$
 D $\hat{y} = 0.3x + m$
 $m = 2.8$ $m = 4$

17 $a > 1, b > 0, a > b > 3$ $\frac{2}{a-1} > \frac{1}{b}$
 A $\frac{3-2\sqrt{2}}{4}$ B $\frac{3-2\sqrt{2}}{2}$ C $\frac{3-4\sqrt{2}}{2}$ D $\frac{3-4\sqrt{2}}{4}$

18 $P \ ABC \ PA \ ABC \ BAC \ 60 \ AB \ 2 \ AC \ 1 \ PA \ 3$

$P \ ABC$

A $\frac{13}{2}$ B 13 C 52 D $\frac{13\sqrt{13}}{6}$

19 $x^2 \ y^2 \ 1 \ a, 2! \ 3 \ a$

A $2, 4!$ B $0, 4!$

C $2\sqrt{3}, 2\sqrt{3}!$ D $2\sqrt{3}, 0! \ 0, 2\sqrt{3}!$

20 $C: \frac{x^2}{4} \ \frac{y^2}{16} \ 1 \ A \ B \ l \ C \ M$

$N \ MA \ k_1 \ NB \ k_2 \ NA \ k_3 \ k_1 \ 2k_2$

k_1, k_3

B $\frac{1}{2}$ C 8 D 8

)

$n \ \mathbf{N}^* \ 2a_{n-1} \ a_n \ a_{n-2} \cdot (\)$

$E(X) \ 2 \ E(2X) \ 4 \cdot (\)$

$f(x) \ e^x(x-1) \ (\)$

$b \ (\)$

$1 \ 0 \ 2 \ \cdot (\)$

$\bar{x} \ \bar{y} \ \cdot (\)$



13. $y = 2x - 1$ $\frac{1}{2}, 0$ ()

14. $y = 3\sin 2x - \frac{1}{3}$ $\frac{1}{6}$ $y = 3\sin 2x$.()

15. $a_1, a_2, a_3, a_4, \dots$ a_1, a_3, a_5, \dots .()

16. a, b, ac^2, bc^2 .()

17. $y^2 = 2px$ $2p$.()

18. $X \sim N(\mu, \sigma^2)$ $P(X > \mu) = \frac{1}{2}$.()

19. $\angle ABC = \sin A = \sin B$

1~10.B C D A D A B D C A

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