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1.

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C

D

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A

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C

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A .

B.

C .

D .

4.

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C

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5.

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B.

C.

D.

6.

A.

B.

C.

D.

7.

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B

C

D

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A

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9.

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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

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

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 $3x - \frac{1}{x} = n$ $n \in \mathbb{N}^*$ $16 - n =$

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

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

14 $f(x) = ae^x \ln x$ 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 N 3, 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 $a = 1, b = 0$ $a \square b = 3$ $\frac{2}{a-1} \square \frac{1}{b}$
 A $\frac{3 \square 2\sqrt{2}}{4}$ B $\frac{3 \square 2\sqrt{2}}{2}$ C $\frac{3 \square 4\sqrt{2}}{2}$ D $\frac{3 \square 4\sqrt{2}}{4}$

18 $P \triangle ABC$ $PA \perp ABC$ $ABC \perp BAC$ 60° $AB = 2$ $AC = 1$ $PA = 3$

$P \triangle ABC$

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

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

1. $C_5^3 = 5 \cdot 4 \cdot 3 = 60$. ()

2. a_n $n \in \mathbf{N}^*$ $2a_{n-1} = a_n + a_{n-2}$. ()

3. $X \sim E(\lambda)$ $E(X) = 2$ $E(2X) = 4$. ()

4. $f(x) = xe^x$ $f'(x) = e^x(x+1)$. ()

5. $f(x) = a, b$ ()

6. $x \in \mathbf{R} \mid x^2 - 2x + 1 = 0$ 2 . ()

7. $y = \hat{b}x + \hat{a}$ \bar{x} \bar{y} . ()

8.

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

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

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

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