

第二十五届 希望杯 全国数学邀请赛

高一 第 1 试试题

一 选择题

1 $a > 0, a \neq 1, x > 0$, ()
 A $a \in \mathbf{R}$ B $a \in (0, \infty)$ C $a \in (1, \infty)$ D $a \in (-\infty, 1)$

2 $1, 0, (2^{-2})^{-1}, (2^{-2})^{-1}, 4, 3, \dots$, ()
 A 2 B $\frac{1}{2}$ C $2\frac{1}{2}$ D $2\frac{1}{2}$

3 $\lg 3 = 0.4771$, ()
 A $\lg \frac{1}{3} = 0.4771$ B $\lg \frac{3}{10} = 0.5229$
 C $\lg 300 = 2.5229$ D $\lg \sqrt{99} < 1$

4 The domain of the function $\frac{\sqrt{x^2 - 6}}{\lg x}$ is ()
 A $0 < x < 3$ B $0 < x < 3$ and $x \neq 1$
 C $0 < x \leq 3$ and $x \neq 1$ D $0 < x \leq 3$

5 $x > 1, x^0, x^2, \dots, x^{17}$, domain ()
 A 2 B 3 C 4 D 5

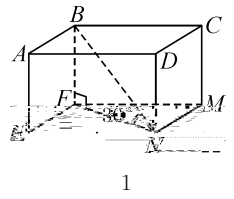
6 $6 \in ()$, $(-3, 3]$, ()
 A 8 B 4.4 C 7 D $5\sqrt{2}$

7 :
 (1) $\lg 1$; (2) $2^{-\frac{1}{2}}$; (3) $2^{-2} \lg$; (4) \sin
 ()
 A 1 2 3 B 1 2 4 C 1 3 4 D 2 3 4

8 $1, -$, \triangle , \angle , 90° , 30° , ()
 A 3^3 B $\sqrt{3}^3$ C $\frac{3}{2}^3$ D 3^3

9 $(2)^{\left(2 - \frac{1}{2}\right)}$ 0 ()
 A > 2 B $2 \leq \leq \sqrt{6}$ C $2 < \leq \sqrt{6}$ D $2 < < \sqrt{6}$

10 () $2\frac{1}{2}$, $[\log_2(\log_5 4)]$ $[\log_2(\log_4 5)]$ ()
 A 0 B 1 C $\sqrt{2}$ D 2



二 A 组填空题

4 40

11 () , () $[1, \infty)$,

12 \odot \odot 2 3, \odot 、 \odot 、 \odot , \angle 90° ,

\odot

13 { } 37 } , { \in } , { \in } , \cap _____

14 > 0 , $\neq 1$, () $\lg(2^2 \cdot 2^3)$, $\log(2^2 \cdot 5 \cdot 7) > 0$

15 \triangle , $4\sqrt{3}$, \angle 60° ,

16 { $2^2 \cdot 4 > 0$ } , { $2^2 \cdot 6$ } $4 < 0$, $\in \mathbf{Z}$ } , \cap

4

17 $1, 2$ $2^2 \cdot 2^2 = 0$, $1, 2$ $2^2 \cdot 3 \cdot 6 = 0$

18 : 1, 2, 1, 2, 2, 2, 1, 2, 2, 2, 2, 2, 1, ... , $1 \cdot 2$, 1

(1) 1 (2) 2 , 2014 _____

19 { $\frac{1}{2} \leq x < 2$,

{ $\frac{16}{2} \leq x \leq 6$ } _____

20 The radius of the circle is 2. The chord is equal to the chord . Both of the distance from the 2 chords to point are 1. The area range of the quadrilateral is _____

radius chord quadrilateral

三 B 组填空题

8 40

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高一 第 1 试答案

题号	1	2	3	4	5	6	7	8	9	10
答案										
题号	11		12		13		14		15	
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