2023 3

120 150 1 2 5 8 40 1 12 4 7 4 12 $= 4 - \ln A, B \mid$ 2. 1+ 3 2 + 3 3. 3 3 () 1 36 216 10 2 4. $() = 2^{-2} -$ (2 -1, +1)() '() = 0 > 05. 2 () + '() > 0 () < 0(-,-1) (1,+) (-1,0) (1,+) (-1,0) (0,1) $6 {}^{4}+(+1) = {}_{0}+{}_{1}(+2)+{}_{2}(+2)^{2}+\cdots + (+2) {}_{2}=()$ 45 2 15

()

. $() = \frac{1}{2} + 2$

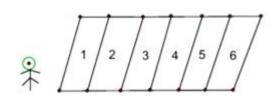
```
\left(-\frac{2}{4}, \frac{2}{4}\right) \qquad \left[-\frac{2}{4}, \frac{2}{4}\right] \qquad \left(-\frac{2}{4}, \frac{2}{4}\right]
                = () > 0 () > 0 '()
     '(\ )<\ (\ ) 0 1 3 (0) (1)
 ( )
    (1) > () > 3 (0)
                       3 (0) > ( ) > (1)
     3 (0)> (1)> ()
                                ()>3 (0)> (1)
                             5 20
                                                         0
                                                6
                                    20
                                       600
                                                       2
                                           240
10.
    _{-1}^{-1} = \frac{(-1)!}{(-)!}
3^{-3} - 2^{-\frac{2}{5}} = 14
                        {}_{4}^{3} + {}_{5}^{3} + {}_{6}^{3} + \cdots + {}_{10}^{3} = 32
11. ()=^2+ +2, ()= ()- , ()
. ( ) \frac{1}{4},1 3 . \forall > 0, ( ) > \frac{2}{16}
. () 2
                                  . ( )
                                                             (3,4)
12 () = +\frac{4}{} + 2 ()
     () 6,+∞)
      3 + +6 = 0 = ()
      ( -1) 1 2
        ^{2}()-5()-14=0
```

II

4 5 20



2



14.
$$= 2\sin + \sin 2$$
 (0,)

15.
$$P$$
 2 Q $- 3 = 0$

16. 6

(1)

(2)

(2)
$$(1 +)^{2023} = _{0} + _{1} + _{2} ^{2} + _{2023} + _{2023} + _{2022} + _{2021} + _{32020} + _{2023}$$

1. 12 $() = {}^{3}+3 {}^{2}+ + {}^{2} -1$ 0

- (1)

20. 12
$$() = {}^{3} + (-1) {}^{2} - 3 + 1$$

- $(1) = 1 \qquad ()$
- (2) O ()

21. 12
$$() = - -2(\in), () = - - (+1).$$

- (1)
- (2) $() \le ()$

- $(1) \qquad = \qquad \qquad \left[-1,3\right]$
- (2) $\begin{pmatrix} 1 & 2 & 1 \\ 1 & 2 & 2 \end{pmatrix}$