

# 2021

8

5

40

$A = \{x \mid |2 - x| \leq 3\}$      $B = \{x \mid |2^x - 2| \leq 2\}$      $f: \mathbb{R} \rightarrow \mathbb{R}, f(x) = A \cap B$   
 fl. 3ł    fl. 3Q    fb, Żwł    Q, Żwł

2018

I

2

$A = \{x \mid |x^2 - x| \leq 0\}$      $C_{\mathbb{R}} A$

$\sin U = \frac{1}{3}$      $\cos 2U = 1$   
 $\frac{7}{9}$      $\frac{2\sqrt{2}}{9}$      $\frac{2\sqrt{2}}{9}$      $\frac{7}{9}$

2018

$\sin U = \frac{1}{3}$      $\cos 2U = 1$

$|\overline{AB}| = 3$      $|\overline{AC}| = 2$      $|\overline{BC}| = 1$      $|\overline{AB} \cdot \overline{BC}| = 1$   
 ! 3    ! 2    2    3

2019

II

3

$a = 10.6^{0.6}$      $b = 10.6^{0.5}$      $c = 10.7^{0.5}$   
 $a < b < c$      $a < c < b$      $b < c < a$      $c < b < a$

2019

3

$a = 1 \log_2 0.2$      $b = 12^{0.2}$      $c = 10.2^{0.3}$

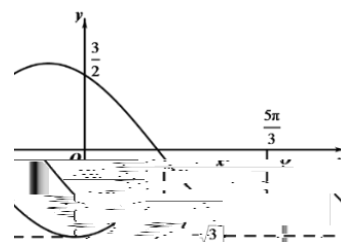
$f(x) = 1 - \lfloor x \rfloor$      $g(x) = 2x^5$      $x^3$   
 200    120    80    40

2017

6

$\frac{1}{x^2} - \frac{1}{x^2} = x^6$      $x^2$

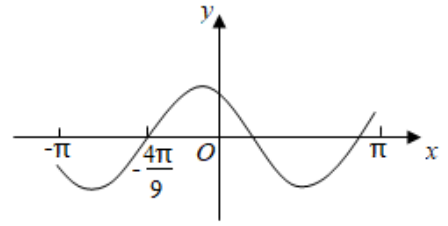
$f(x) = 1 + A \sin(kx)$      $0, k > 0, 0 < x < \pi$   
 $f(x) = 1 + \sin \frac{x}{3}$      $f(x) = 1 + \sqrt{3} \sin \frac{x}{2}$   
 $f(x) = 1 + \sqrt{3} \sin \frac{x}{2}$      $f(x) = 1 + \sqrt{3} \sin \frac{x}{3}$



2020

7  $f(x) = 1 + \cos kx$   $z \frac{\pi}{6}$   $0, \pi, \pi C$

$f(x)$



$\frac{1}{4}$

$\frac{1}{3}$

$\frac{5}{16}$

$\frac{2}{5}$

2020 II 7

$f(x) = \begin{cases} e^x, & x < 1 \\ x^2 + 2x, & x \geq 1 \end{cases}$

$g(x) = f(x) + a$

$g(x) = a$

$\frac{1}{e} \leq \frac{1}{e} < \frac{1}{e}$

$\frac{1}{e} \leq \frac{1}{e}$

0, 2

$\frac{1}{e} \leq \frac{1}{e}$

2018 I 9

$f(x) = \begin{cases} e^x, & x < 0 \\ \ln x, & x > 0 \end{cases}$

$g(x) = f(x) + x + a$

$g(x)$

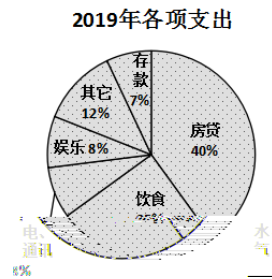
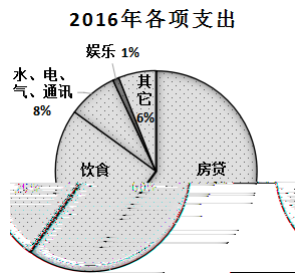
$a$

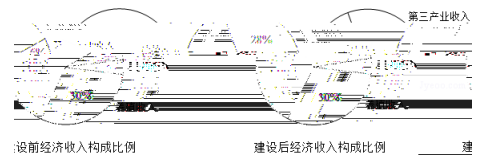
$\frac{4}{5}$

$\frac{5}{0}$

20

3





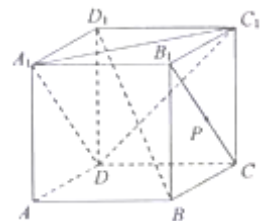
( )

$$f(x) = \cos \frac{\pi x}{2} \quad R$$

$$f(x) = \sin dx$$

2019 I 11  $f(x) = \sin|x|$   $\int |\sin x| dx$

$ABCD$	$A_1B_1C_1D_1$	$P$	$B_1C$
$B_1D$	$APC$		
$P$	$A_1C_1D$		
$P$	$C_1P$	$A_1C_1D$	$60^\circ$
$P$	$AP$	$A_1D$	$60^\circ$



1 2017 II 10  $ABC - A_1B_1C_1$   $\angle ABC = 120^\circ$   $AB = 2$   $BC = 1$

2 2018 I 12  $\alpha$

$$E: \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

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2018 I 8  $C: y^2 = 4x$   $F(-2, 0)$   $\frac{2}{3}$   $C$

$\vec{FM} \cdot \vec{FN} = ( )$

2019 I 16  $C: \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$   $F_1, F_2$

$F_1 C$   $A B$   $\vec{F_1A} = \vec{AB}$   $\vec{F_1B} \cdot \vec{F_2B} = 0$   $C$

2018 I 11  $C: \frac{x^2}{3} - y^2 = 1$   $O$   $F C$   $F$

$C$   $M N. \triangle OMN$   $|MN| = ( )$

4  
 $z = \frac{1-i}{1+i} \cdot 2i$       5      20  
 $|z| = 1$  \_\_\_\_\_

2018 I 2  
 $z = \frac{1-i}{1+i} \cdot 2i$        $|z| = 1$

$0a_n \cdot n$        $S_n$        $a_4 = 14$        $S_8 = 140$        $a_9 = 1$  \_\_\_\_\_  
 $n$

2018 I 2  
 $S_n$        $0a_n \cdot n$        $S_n = 2a_n - 1$        $S_6 = 1$  \_\_\_\_\_

$C: \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  ( $a > 0, b > 0$ )       $(x-2)^2 + y^2 = 4$        $2\sqrt{3}$

C

2017 II 9  
 $C: \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$  ( $a > 0, b > 0$ )       $(x-2)^2 + y^2 = 4$   
 2 C ( )

6 6

2020

16