$\sin\left(\frac{\pi}{6}+\alpha\right)=-\frac{4}{5}$ $\cos\left(\frac{\pi}{3}-\alpha\right)=$

$\frac{4}{5}$ $\frac{3}{5}$ $-\frac{3}{5}$ $-\frac{4}{5}$

z $(1+\mathrm{i})z=\left|3+4\mathrm{i}\right|$ z

5 -5 $\frac{5}{2}$ $-\frac{5}{2}$

$f(x)=\cos 2x+\sqrt{3}\sin 2x$

$f(x)$ -1

$f(x)$ $(\frac{\pi}{6}+\frac{k\pi}{2},0),k\in\mathbf{Z}$

$f(x)$ $[-\frac{\pi}{6},\frac{\pi}{6}]$

$f(x)$ $\frac{1}{2}$ $g(x)=2\cos(\frac{\pi}{3}-x)$

3 $\sqrt{3}$

$\frac{8}{3}\pi$ $\frac{32}{3}\pi$ 16π 32π

$P-ABC$ O PA,PB,PC $PA=PB=PC=2$

P 1 $P-ABC$ V_1 O V_2 $\frac{V_1}{V_2}$

$\frac{\sqrt{3}}{36}$ $\frac{\sqrt{3}}{72}$ $\frac{1}{64}$ $\frac{\sqrt{3}}{24}$

ΔABC C 90° $\overrightarrow{AB}=(k,1)$ $\overrightarrow{AC}=(2,3)$ k

5 -5 $\frac{3}{2}$ $\frac{3}{2}$

ΔABC $c=\sqrt{3}$ $A=75^\circ$ $B=45^\circ$ ΔABC

$\frac{\pi}{4}$ π 2π 4π

$x_1+1,x_2+1,\cdots,x_n+1$ 10 2 $2x_1+2,2x_2+2,\cdots,2x_n+2$

20 8 20 10

21 8 21 10

6 $\frac{3}{5}$

$\frac{2}{5}$ $\frac{7}{10}$

$\frac{17}{10}$ $\frac{21}{125}$ $\frac{81}{250}$

A B C $|\overrightarrow{AB}|=|\overrightarrow{AC}|$ $\overrightarrow{AB}\cdot\overrightarrow{AC}$

0 $-\frac{1}{4}$ $-\frac{1}{2}$ $-\frac{3}{4}$

ΔABC $\overrightarrow{AB}=\vec{c}$ $\overrightarrow{BC}=\vec{a}$ $\overrightarrow{CA}=\vec{b}$

$\vec{a}\cdot\vec{b}>0$ ΔABC $\vec{a}\cdot\vec{b}=0$ ΔABC

$\vec{a}\cdot\vec{b}=\vec{c}\cdot\vec{b}$ ΔABC $(\vec{a}+\vec{c}-\vec{b})\cdot(\vec{a}+\vec{b}-\vec{c})=0$ ΔABC

7 5 7

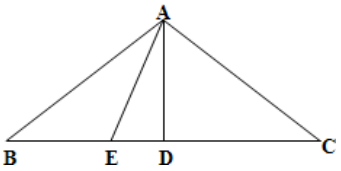
$\bar{x}\le 3$ $\bar{x}\le 3$ $s\le 2$

$\bar{x}\le 3$ 2 1 4

$\frac{\sqrt{3}}{2}+\frac{1}{2}\mathrm{i}$ $ax^2+bx+1=0$ $a=$ $b=$

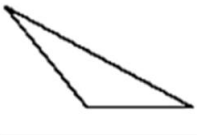
$\triangle ABC$ $AB=AC=2$ D,E BC

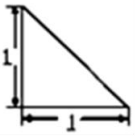
$\overrightarrow{AD}\cdot\overrightarrow{BC}=0$ $\overrightarrow{AE}=x\overrightarrow{AB}+\frac{1}{3}\overrightarrow{AC}$ $x=$ $\overrightarrow{AD}\cdot\overrightarrow{AE}=$

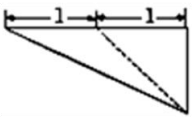


cm

cm^3 cm^2







正视图 侧视图 俯视图

$ABCD$ $\angle A=45^\circ,\angle B=120^\circ,AB=\sqrt{2},AD=3,CD=t$ t

$ABCD$ 2 $BD=$ t

36π

6

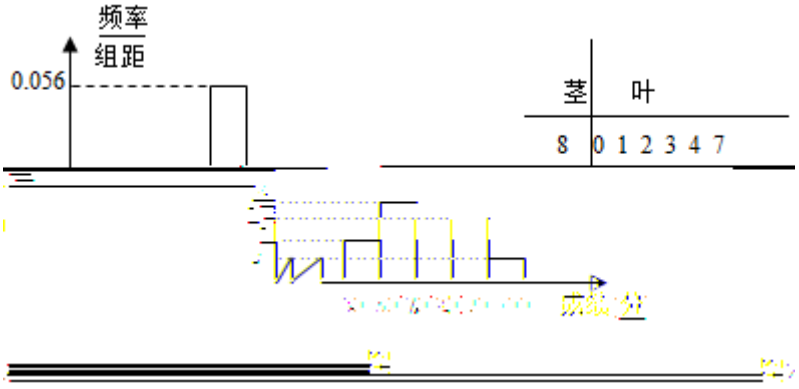
[50,100]

	85	70 84	60 69	60
	A	B	C	D

A,B,C D n

[50,60) [60,70) [70,80) [80,90) [90,100]

80



n

0.1

A,D 2 A

$$f(x)=\sin(2x+\frac{\pi}{6})+2(\sin^2 x-1)$$

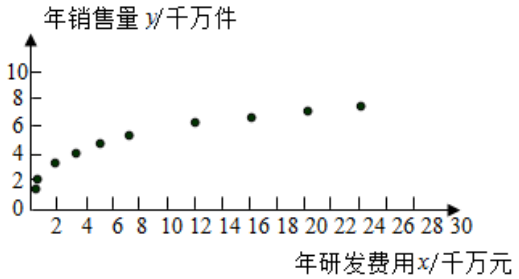
$y=f(x)$

$f(x)+1<m$ $\left[0,\frac{\pi}{3}\right]$ m

x

y 10

x_i $y_i(i=1,2\ldots,10)$



$y=a+bx$ $y=c\cdot x^d$ 0 y

x

$u_i=\ln x_i, v_i=\ln y_i$

y x

$\sum_{i=1}^{10} v_i$	$\sum_{i=1}^{10} u_i$	$\sum_{i=1}^{10}(u_i-\bar{u})(v_i-\bar{v})$	$\sum_{i=1}^{10}(u_i-\bar{u})^2$
15	15	28.25	56.5

$(u_1,v_1),(u_2,v_2),\ldots,(u_n,v_n)$ $v=\alpha+\beta u$

$$\beta=\frac{\sum_{i=1}^{n}(u_i-\bar{u})(v_i-\bar{v})}{\sum_{i=1}^{n}(u_i-\bar{u})^2},\alpha=\bar{v}-\beta\bar{u}$$

ΔABC A,B,C D BC ΔABC

$\frac{AD^2}{3\sin B}$

$\sin\angle BAD\cdot\sin\angle BDA$

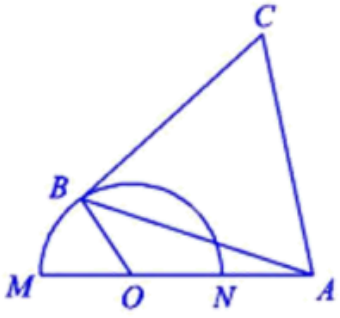
$BC=6AB, AD=2\sqrt{2}$ b

O 4 A MN $OA=4$ B

AB ΔABC A,B,C

ΔABC a $\angle AOB=\theta$ a θ -

$\angle AOB$ $OACB$



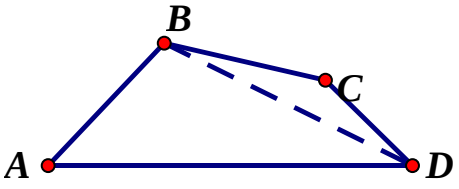
O $|\overrightarrow{AB}|=|\overrightarrow{AC}|$ $\overrightarrow{OB}+\overrightarrow{OC}$ $\overrightarrow{OA}$ $\angle BOC=\theta$

$$\overrightarrow{AB}\cdot\overrightarrow{AC}=(\overrightarrow{OB}-\overrightarrow{OA})\cdot(\overrightarrow{OC}-\overrightarrow{OA})=\overrightarrow{OB}\cdot\overrightarrow{OC}-\overrightarrow{OA}\cdot(\overrightarrow{OB}+\overrightarrow{OC})+\overrightarrow{OA}^2$$

$$=\overrightarrow{OB}\cdot\overrightarrow{OC}-\left|\overrightarrow{OB}+\overrightarrow{OC}\right|+1=\cos\theta-\sqrt{(\overrightarrow{OB}+\overrightarrow{OC})^2}+1$$

$$=\cos\theta-\sqrt{2+2\cos\theta}+1=\cos\theta-2\cos\frac{\theta}{2}+1=2\cos^2\frac{\theta}{2}-2\cos\frac{\theta}{2}$$

$$=2(\cos\frac{\theta}{2}-\frac{1}{2})^2-\frac{1}{2}$$ $\overrightarrow{AB}\,\overrightarrow{AC}$ $-\frac{1}{2}$ $\theta=\frac{2\pi}{3}$



x $r=6$

36π $\frac{1}{3}$ r^2x 36 $x=3$

$l=\sqrt{6^2+3^2}=3\sqrt{5}$.

$S=S$ $+S$ $=\pi rl+\pi r^2=\pi\times6\times3\sqrt{5}+36\pi=18\left(2+\sqrt{5}\right)\pi$ 2

x r

36π $\frac{1}{3}$ r^2x 36 $r=\sqrt{\frac{108}{x}}$

$$l=\sqrt{x^2+\left(\sqrt{\frac{108}{x}}\right)^2}=\sqrt{x^2+\frac{108}{x}}$$

$$y=\pi rl=\pi\sqrt{\frac{108}{x}}\sqrt{x^2+\frac{108}{x}}=\pi\sqrt{108}\sqrt{x+\frac{108}{x^2}}$$

$$=6\sqrt{3}\pi\sqrt{\frac{x}{2}+\frac{x}{2}+\frac{108}{x^2}}\geq6\sqrt{3}\pi\sqrt{3\sqrt[3]{\frac{x}{2}\times\frac{x}{2}\times\frac{108}{x^2}}}=18\sqrt{3}\pi .$$

$\frac{x}{2}=\frac{x}{2}=\frac{108}{x^2}$ $x=6$.

6 .

18. 12

$$n=\frac{6}{0.012\times10}=50$$

$$x=\frac{2}{50\times10}=0.004$$

Cd *Ce* *Cf* *Cg* *Ch* *de* *df* *dg* *dh* *ef* *eg* *eh* *fg* *fh* *gh* 28

A

AB *AC* *Ad* *Ae* *Af* *Ag* *Ah* *BC* *Bd* *Be* *Bf* *Bg* *Bh*

Cd *Ce* *Cf* *Cg* *Ch* 18

$$P=\frac{18}{28}=\frac{9}{14}$$

$$f(x)=\sin\left(2x+\frac{\pi}{6}\right)+2\left(\sin^2 x-1\right)$$

$$=\frac{\sqrt{3}}{2}\sin 2x+\frac{1}{2}\cos 2x+1-\cos 2x-2$$

$$=\frac{\sqrt{3}}{2}\sin 2x-\frac{1}{2}\cos 2x-1=\sin\left(2x-\frac{\pi}{6}\right)-1$$

$2k\pi+\frac{\pi}{2}\le 2x-\frac{\pi}{6}\le 2k\pi+\frac{3\pi}{2}$ $k\in\mathbf{Z}$ $k\pi+\frac{\pi}{3}\le x\le k\pi+\frac{5\pi}{6}$ $k\in\mathbf{Z}$

$\therefore$ $y=f(x)$ $(k\pi+\frac{\pi}{3}$ $k\pi+\frac{5\pi}{6})$ $k\in\mathbf{Z}$

$\because 2x-\frac{\pi}{6}=k\pi+\frac{\pi}{2}$ $x=\frac{k\pi}{2}+\frac{\pi}{3}$

$\therefore$ $y=f(x)$ $x=\frac{k\pi}{2}+\frac{\pi}{3}$ $k\in\mathbf{Z}$

$f(x)+1=\sin(2x-\frac{\pi}{6})$

$\because 0\le x\le\frac{\pi}{3}$ $\therefore -\frac{\pi}{6}\le 2x-\frac{\pi}{6}\le\frac{\pi}{2}$ $\therefore -\frac{1}{2}\le\sin(2x-\frac{\pi}{6})\le 1$

$\therefore$ $m>-\frac{1}{2}$

$\therefore m$ $(-\frac{1}{2}$ $+\infty)$

$$y=c\cdot x^d$$

$y=c\cdot x^d$ $\ln y=\ln c+d\ln x$ $v=1nc+du$

$$\overline{u}=\overline{v}=\frac{\sum_{i=1}^{10}u_i}{10}=\frac{15}{10}=\frac{3}{2}$$

$$d=\frac{\sum_{i=1}^{n}\left(u_i-\overline{u}\right)\left(v_i-\overline{v}\right)}{\sum_{i=1}^{n}\left(u_i-\overline{u}\right)^2}=\frac{28.25}{56.5}=\frac{1}{2}$$

$\ln c=m$ $m=\overline{v}-du=\frac{3}{2}-\frac{1}{2}\times\frac{3}{2}=\frac{3}{4}$ $c=e^{\frac{3}{4}}$

y x $y=e^{\frac{3}{4}}\sqrt{x}$