$oldsymbol{9}$,សសេរចំនួនកុំផ្លិចZខាងក្រោមជាទម្រង់ត្រីកោណមាត្រៈ

n.
$$Z = 1 + i\sqrt{3}$$

2.
$$Z = 2\sqrt{3} + 2i$$

7.
$$Z = 1 + i\sqrt{3}$$
 2. $Z = 2\sqrt{3} + 2i$ **7.** $Z = \sqrt{3} + 3i$

W.
$$Z = -4 + 4i\sqrt{3}$$

ង.
$$Z = -\sqrt{15} + i\sqrt{5}$$

$$\mathbf{\hat{v}} \cdot Z = -8\sqrt{2} + 8\sqrt{2}i$$

$$\Im$$. $Z = -5$

13.
$$Z = -5$$
 13. $Z = -2\sqrt{5}i$

1.
$$Z = -\frac{3}{2} - \frac{3\sqrt{3}}{2}i$$
 1. $Z = -\sqrt{21} - \sqrt{7}i$

$$\mathfrak{N}. Z = -\sqrt{21} - \sqrt{7}i$$

២,គេមានចំនួនកុំផ្លិចZ=1-2i និងW=5+3i ។

ក.រផ្ទៀងផ្ទាត់ថា
$$\overline{Z+W}=\overline{Z}+\overline{W}\;;\;\overline{Z-W}=\overline{Z}-\overline{W}\;;\;\overline{Z\times W}=\overline{Z}\times\overline{W}\;$$
 និង $\overline{\left(\frac{Z}{W}\right)}=\frac{\overline{Z}}{\overline{W}}$ ។

ខ.គេឲ្យ
$$M=(1-i)x+(1+i)y$$
 ។ កំណត់តម្លៃ x និង y ដើម្បីឲ្យ $M=Z^2+W+3i$ ។

៣, គេយក $Z_1 = 2 - 3i$ និង $Z_2 = -4 + i$ ។

កំណត់រាងពីជគណិតនៃចំនួនកុំផ្តិចខាងក្រោម៖

$$\hat{\mathbf{n}} \cdot Z_1 + Z_2$$

8.
$$3Z_1 - 2Z_2$$

គ.
$$Z_1 \times Z_2$$
; $\frac{Z_1}{Z_2}$

8.
$$3Z_1 - 2Z_2$$
 6. $Z_1 \times Z_2 : \frac{Z_1}{Z_2}$ **10.** $(1 - Z_1)(5 + Z_2)$

ង.
$$\frac{1-Z_2}{5+Z_1}$$

៤, ប្រើទម្រង់ត្រីកោណមាត្រ គណនា $Z_{1}Z_{2}$ និង $\frac{Z_{1}}{Z}$

n.
$$Z_1 = -1 + i$$
; $Z_2 = 1 + i$

n.
$$Z_1 = -1 + i$$
; $Z_2 = 1 + i$ **2.** $Z_1 = -2 + 2i\sqrt{3}$; $Z_2 = -1 + i\sqrt{3}$ **n.** $Z_1 = -4\sqrt{3} + 4i$; $Z_2 = -4i\sqrt{3} + 4i$; $Z_3 = -4i\sqrt{3} + 4i$

A.
$$Z_1 = -4\sqrt{3} + 4i$$
; $Z_2 = -4i$

$$\mathbf{U}. Z_{1} = \sqrt{2} \left(\cos \frac{\pi}{5} + i \sin \frac{\pi}{5} \right) \; ; \; Z_{2} = \left(\cos \frac{2\pi}{5} + i \sin \frac{2\pi}{5} \right)$$

$$\mathbf{U}. Z_{1} = \sqrt{2} + i \sqrt{2} \; ; \; Z_{2} = \sqrt{2} - i \sqrt{2}$$

$$\mathbf{\tilde{U}}. Z_{1} = 6 \left(\cos \frac{\pi}{9} + i \sin \frac{\pi}{9} \right); \ Z_{2} = 3\sqrt{2} \left(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3} \right) \quad \mathbf{\tilde{u}}. Z_{1} = \sqrt{2} \cos \frac{\pi}{3} - \sqrt{2}i \sin \frac{\pi}{3}; \ Z_{2} = -\cos \frac{\pi}{4} - i \sin \frac{\pi}{4} \right)$$

6.
$$Z_1 = \sqrt{2}\cos\frac{\pi}{3} - \sqrt{2}i\sin\frac{\pi}{3}$$
; $Z_2 = -\cos\frac{\pi}{4} - i\sin\frac{\pi}{4}$

៥, គណនាចំនួនកុំផ្លិចខាងក្រោម៖

n.
$$Z = (-1+i)^{14}$$

2.
$$Z = (1+i)^{11}$$

គ.
$$Z = (1-i)^{100}$$

$$\mathbf{W}.Z = \left(-2 - 2i\sqrt{2}\right)^5$$

$$\mathbf{\tilde{n}.} Z = \left(-1+i\right)^{14} \qquad \mathbf{\tilde{2}.} Z = \left(1+i\right)^{12} \qquad \mathbf{\tilde{n}.} Z = \left(1-i\right)^{100} \qquad \mathbf{W}. Z = \left(-2-2i\sqrt{2}\right)^{5} \qquad \mathbf{\tilde{3}.} Z = \frac{1}{\left(1+i\sqrt{3}\right)^{619}}$$

$$\mathbf{\tilde{U}}.Z = \left(-\frac{1}{\sqrt{2}} + i\frac{1}{\sqrt{2}}\right)^{2017} \mathbf{\tilde{U}}.Z = \left(\frac{3}{2} + i\frac{\sqrt{3}}{2}\right)^{1969} \mathbf{\tilde{U}}.Z = \left(\frac{5 + 3i\sqrt{3}}{1 - 2i\sqrt{3}}\right)^{21} \mathbf{\tilde{U}}.Z = \left(\frac{1 + i\sqrt{3}}{1 - i}\right)^{2017} \mathbf{\tilde{U}}.Z = \left(\frac{3\sqrt{3} + i}{\sqrt{3} - 2i}\right)^{2011} \mathbf{\tilde{U}}.Z = \left(\frac{3\sqrt{3} + i}{$$

$$\mathbf{L}.Z = \left(\frac{5+3i\sqrt{3}}{1-2i\sqrt{3}}\right)^{21} \mathbf{W}.Z =$$

$$Z = \left(\frac{3\sqrt{3} + i}{\sqrt{3} - 2i}\right)^{2011}$$

៦, សរសេរចំនួនកុំផ្លិចខាងក្រោមជាទម្រង់ត្រីកោណមាត្រ៖

$$\mathbf{\tilde{n}}.Z = 2\cos\frac{\pi}{5} - 2i\sin\frac{\pi}{5}$$

$$2.Z = -5\cos\frac{\pi}{7} - 5i\sin\frac{\pi}{7}$$

គឺ.
$$Z = -4\cos\frac{\pi}{12} + 4i\sin\frac{\pi}{12}$$

$$\mathbf{\tilde{n}}. Z = 2\cos\frac{\pi}{5} - 2i\sin\frac{\pi}{5} \qquad \mathbf{2}. Z = -5\cos\frac{\pi}{7} - 5i\sin\frac{\pi}{7} \qquad \mathbf{\tilde{n}}. Z = -4\cos\frac{\pi}{12} + 4i\sin\frac{\pi}{12} \qquad \mathbf{W}. Z = 5\sin\frac{\pi}{9} + 5i\cos\frac{\pi}{9}$$

\(\lambda.
$$Z = -6\sin\frac{\pi}{10} + 6i\cos\frac{\pi}{6}$$
 \(\text{U}. $Z = 1 + \cos\frac{\pi}{8} + i\sin\frac{\pi}{8}$ **\(\text{U}.** $Z = 1 + \sin\frac{\pi}{7} + i\cos\frac{\pi}{7}$

$$\mathfrak{V}. Z = 1 + \cos\frac{\pi}{8} + i\sin\frac{\pi}{8}$$

$$\mathbf{\hat{g}}.Z = 1 + \cos\frac{\pi}{5} - i\sin\frac{\pi}{5}$$

$$\mathbf{\vec{u}}.Z = 1 + \sin\frac{\pi}{7} + i\cos\frac{\pi}{7}$$

$$\mathbf{W}. Z = 1 - \cos\frac{\pi}{5} + i\sin\frac{\pi}{5} \quad \mathbf{M}. Z = 1 - \cos\frac{\pi}{8} - i\sin\frac{\pi}{8} \quad \mathbf{L}. Z = 1 - \sin\frac{\pi}{10} - i\cos\frac{\pi}{10} \quad \mathbf{U}. Z = \sin\frac{\pi}{8} - \left(1 + \cos\frac{\pi}{8}\right)i$$

$$\mathbf{L}.Z = 1 - \sin\frac{\pi}{10} - i\cos\frac{\pi}{10}$$

$$\mathbf{V.} Z = \sin\frac{\pi}{8} - \left(1 + \cos\frac{\pi}{8}\right)i$$

៧,សរសេរចំនួនកុំផ្តិចខាងក្រោមជាទម្រង់ត្រីកោណមាត្រ៖

កំ.
$$Z = \sqrt{3}(3-3\sqrt{3})i$$
 8. $Z = 1+\sqrt{2}+i$ គំ. $Z = 2+\sqrt{2}+i\sqrt{2}$ ឃ. $Z = 2+\sqrt{3}+i$ ងំ. $Z = 2+\sqrt{3}-i$

8.
$$Z = 1 + \sqrt{2} + i$$

គ.
$$Z = 2 + \sqrt{2} + i\sqrt{2}$$

W.
$$Z = 2 + \sqrt{3} + i$$

ង.
$$Z = 2 + \sqrt{3 - i}$$

$$\nabla \cdot Z = 1 + (2 - \sqrt{3})t$$

13.
$$Z = 2 - \sqrt{2} + i\sqrt{2}$$

ជ.
$$Z = \sqrt{2 + \sqrt{2}} + i\sqrt{2 - \sqrt{2}}$$

$$\mathbf{\tilde{u}}.\,Z = 1 + \left(2 - \sqrt{3}\right)i \qquad \qquad \mathbf{\tilde{u}}.\,Z = 2 - \sqrt{2} + i\sqrt{2} \qquad \mathbf{\tilde{u}}.\,Z = \sqrt{2 + \sqrt{2}} + i\sqrt{2 - \sqrt{2}} \qquad \mathbf{\tilde{u}}.\,Z = \sqrt{2 - \sqrt{3}} - i\sqrt{2 + \sqrt{3}}$$

$$\mathfrak{J}. Z = -\sqrt{2 - \sqrt{2}} - i\sqrt{2 + \sqrt{2}}$$

$$\mathfrak{Y}.Z = -\sqrt{2-\sqrt{2}} - i\sqrt{2+\sqrt{2}} \qquad \mathfrak{A}.Z = -\frac{1}{\left(2-\sqrt{3}\right)} + \sqrt{3}\left(2+\sqrt{3}\right)i \qquad \mathfrak{C}.Z = \sqrt{6} - \sqrt{3} + i\sqrt{3}$$

U.
$$Z = \sqrt{6} - \sqrt{3} + i\sqrt{3}$$



លំខាត់ចំនួនគុំឆ្លិច

