

Assignment : Complex No.

Date _____

Find the absolute value.

1) $2 - 2i$

2) $4\sqrt{2}(\cos 135 + i\sin 135)$

Plot each point in the complex plane using rectangular coordinates.

3) $-4 - 3i$

4) $-6 - 2i$

5) $3 - 6i$

6) $5 + i$

Write each in polar form.

7) $\frac{\sqrt{19}}{2} - \frac{\sqrt{57}}{2}i$

8) $\frac{3\sqrt{2}}{2} - \frac{3\sqrt{2}}{2}i$

9) $3\sqrt{3} - 3i$

10) $-\frac{3}{2} - \frac{3\sqrt{3}}{2}i$

Simplify. Write your answer in rectangular form.

11) $(-5 + 3i)(1 - i)$

12) $(-4 - 5i)(-6 - 4i)$

13) $\frac{5 - 2i}{2 - 3i}$

14) $\frac{1 + 3i}{4 + 2i}$

15) $\frac{\frac{5\sqrt{2}}{2} + \frac{5\sqrt{2}}{2}i}{\sqrt{3} + i}$

16) $\frac{-2 + 6i}{6 + 3i}$

17) $(2 + 4i)^4$

18) $(3 - 6i)^4$

19) $(4 + 2i)^3$

20) $(6 + 3i)^4$

Find all n th roots. Write your answers in polar form.

21) $3\sqrt{3} + 3i, n = 5$

22) $-\frac{\sqrt{33}}{2} + \frac{\sqrt{11}}{2}i, n = 5$

23) $\frac{3}{2} + \frac{3\sqrt{3}}{2}i, n = 5$

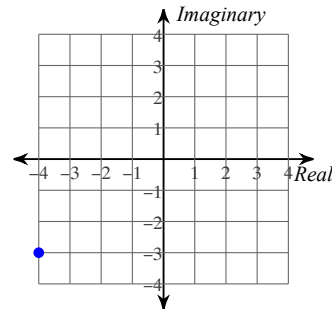
24) $-\frac{5\sqrt{3}}{2} + \frac{5}{2}i, n = 2$

Answers to Assignment : Complex No.

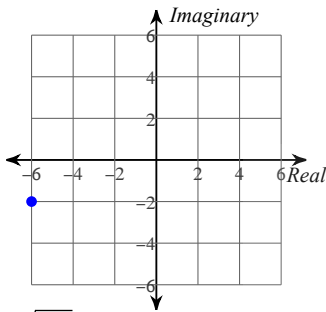
1) $2\sqrt{2}$

2) $4\sqrt{2}$

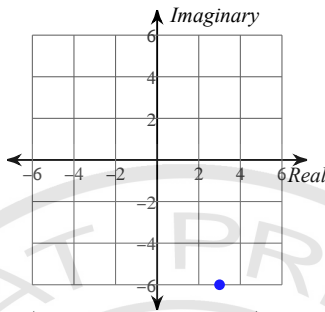
3)



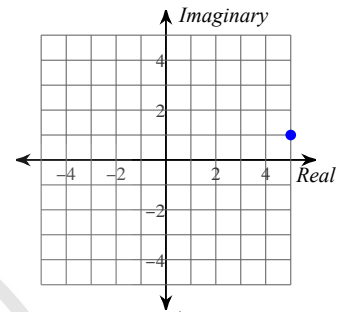
4)



5)



6)



7) $\sqrt{19}(\cos 300 + i \sin 300)$

8) $3\left(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4}\right)$

9) $6\left(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6}\right)$

10) $3(\cos 240 + i \sin 240)$

11) $-2 + 8i$

12) $4 + 46i$

13) $\frac{16}{13} + \frac{11}{13}i$

14) $\frac{1}{2} + \frac{1}{2}i$

15) $\frac{5\sqrt{6} + 5\sqrt{2}}{8} + \frac{5\sqrt{6} - 5\sqrt{2}}{8}i$

16) $\frac{2}{15} + \frac{14}{15}i$

17) $-112 - 384i$

18) $-567 + 1944i$

19) $16 + 88i$

20) $-567 + 1944i$

21) $\sqrt[5]{6}\left(\cos \frac{\pi}{30} + i \sin \frac{\pi}{30}\right)$

22) $\sqrt[10]{11}\left(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6}\right)$

$\sqrt[5]{6}\left(\cos \frac{13\pi}{30} + i \sin \frac{13\pi}{30}\right)$

$\sqrt[10]{11}\left(\cos \frac{17\pi}{30} + i \sin \frac{17\pi}{30}\right)$

$\sqrt[5]{6}\left(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6}\right)$

$\sqrt[10]{11}\left(\cos \frac{29\pi}{30} + i \sin \frac{29\pi}{30}\right)$

$\sqrt[5]{6}\left(\cos \frac{37\pi}{30} + i \sin \frac{37\pi}{30}\right)$

$\sqrt[10]{11}\left(\cos \frac{41\pi}{30} + i \sin \frac{41\pi}{30}\right)$

$\sqrt[5]{6}\left(\cos \frac{49\pi}{30} + i \sin \frac{49\pi}{30}\right)$

$\sqrt[10]{11}\left(\cos \frac{53\pi}{30} + i \sin \frac{53\pi}{30}\right)$

23) $\sqrt[5]{3}\left(\cos \frac{\pi}{15} + i \sin \frac{\pi}{15}\right)$

24) $\sqrt{5}\left(\cos \frac{5\pi}{12} + i \sin \frac{5\pi}{12}\right)$

$\sqrt[5]{3}\left(\cos \frac{7\pi}{15} + i \sin \frac{7\pi}{15}\right)$

$\sqrt{5}\left(\cos \frac{17\pi}{12} + i \sin \frac{17\pi}{12}\right)$

$\sqrt[5]{3}\left(\cos \frac{13\pi}{15} + i \sin \frac{13\pi}{15}\right)$

$\sqrt[5]{3}\left(\cos \frac{19\pi}{15} + i \sin \frac{19\pi}{15}\right)$

$\sqrt[5]{3}\left(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3}\right)$