For $\left(2+2\sqrt{3}i\right)^6$, answer the followings.

1. Find r.

2. Identify θ.

   a) π

   b) $\frac{\pi}{2}$

   c) $\frac{\pi}{3}$

   d) $\frac{\pi}{4}$

3. Identify $2+2\sqrt{3}i$ in polar form.

   a) $4(\cos\pi + i\sin\pi)$

   b) $4\left(\cos\frac{\pi}{2} - i\sin\frac{\pi}{2}\right)$

   c) $\left(\cos\frac{2\pi}{3} + i\sin\frac{2\pi}{3}\right)$

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

4. Identify the value of $\left(2+2\sqrt{3}i\right)^6$.

   a) 4

   b) 4096

   c) 256

   d) $None\ of\ the\ above$

For $(12i - 12)^3$, answer the followings.

1. Identify r.

   a) 12
   b) $12\sqrt{2}$
   c) 144
   d) 0

2. Identify θ.

   a) π
   b) $\frac{\pi}{2}$
   c) $\frac{\pi}{3}$
   d) $\frac{3\pi}{4}$

3. Identify $(\mathbf{12i - 12})$ in polar form.

   a) $12\sqrt{2}\left(\cos\frac{3\pi}{4} + i\sin\frac{3\pi}{4}\right)$

   b) $144\left(\cos\frac{\pi}{3} + i\sin\frac{\pi}{3}\right)$

   c) $12\left(\cos\frac{\pi}{2} + i\sin\frac{\pi}{2}\right)$

   d) $0(\cos\pi + i\sin\pi)$

4. Identify the value of $\mathbf{(12i - 12)^3}$

   a) 3456

   b) $3456i$

   c) $3456 + 3456i$

   d) $None\ of\ the\ above$

For $\left(3\sqrt{3}-3i\right)^3$, answer the followings.

1. Find r.

2. Identify θ.

   a) π

   b) $-\frac{\pi}{6}$

   c) $\frac{\pi}{6}$

   d) $\frac{3\pi}{4}$

3. Identify $\left(3\sqrt{3}-3i\right)$ in polar form.

   a) $12\left(\cos\frac{3\pi}{4}+i\sin\frac{3\pi}{4}\right)$

   b) $12\left(\cos\frac{\pi}{6}+i\sin\frac{\pi}{6}\right)$

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

   d) $6(\cos\pi+i\sin\pi)$

4. Identify the value of $\left(3\sqrt{3}-3i\right)^3$.

   a) 216

   b) $-216i$

   c) $216+216i$

   d) $None\ of\ the\ above$