

<p>1. Express $\sqrt{-1}$ in terms of i.</p>	<p>2. Express $\sqrt{3+4i}$ in $x+yi$ form.</p>
<p>3. Express $\sqrt{5+12i}$ in $x+yi$ form.</p>	<p>4. Express \sqrt{i} in $x+yi$ form.</p>
<p>5. Express $\sqrt{-i}$ in $x+yi$ form.</p>	<p>6. Express $\sqrt{8-15i}$ in $x+yi$ form.</p>
<p>7. Express $\left(\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}}i\right)(1+i\sqrt{3})$ in polar form.</p>	<p>8. Express $\frac{i\sqrt{2}-\sqrt{6}}{i-1}$ in polar form.</p>
<p>9. Express $-2icis\left(\theta - \frac{3\pi}{2}\right)$ in polar form.</p>	<p>10. Simplify $\left[2^{\frac{1}{6}} cis\left(\frac{\pi}{6}\right)\right]^{12n}$, where n is an integer.</p>
<p>11. Simplify (i) $2cis\left(-\frac{\pi}{6}\right) + \frac{2}{\sqrt{3}}cis\left(\frac{\pi}{3}\right)$ and (ii) $2cis\left(-\frac{\pi}{6}\right) - \frac{2}{\sqrt{3}}cis\left(\frac{\pi}{3}\right)$.</p>	<p>Numerical, algebraic and worded answers.</p> <p>1. i or $-i$ 2. $2+i$ or $-2-i$ 3. $3+2i$ or $-3-2i$ 4. $1/\sqrt{2} + 1/\sqrt{2}i$ or $-1/\sqrt{2} - 1/\sqrt{2}i$ 5. $1/\sqrt{2} - 1/\sqrt{2}i$ or $-1/\sqrt{2} + 1/\sqrt{2}i$ 6. $5/\sqrt{2} - 3/\sqrt{2}i$ or $-5/\sqrt{2} + 3/\sqrt{2}i$ 7. $2cis(\pi/12)$ 8. $2cis(\pi/12)$ 9. $2cis\theta$ 10. 4^n 11. (i) $4\sqrt{3}$ (ii) $(4\sqrt{3})cis(-\pi/3)$</p>