Match-Up — Multiplying and Dividing Complex Numbers

1	$z = 4e^{\frac{i\pi}{3}}$ and $w = 2e^{\frac{i\pi}{4}}$ Find zw in exponential form
2	$z = 2e^{\frac{i\pi}{6}}$ and $w = 4e^{-\frac{i\pi}{12}}$ Find $\frac{z}{w}$ in exponential form
3	$z = 2\left(\cos\frac{2\pi}{3} + i\sin\frac{2\pi}{3}\right)$ and $w = \sqrt{2}e^{i\pi}$ Find $\frac{z}{w}$ in exponential form
4	$z = \frac{1}{4}e^{\frac{5i\pi}{6}}$ and $w = 2\left(\cos\frac{\pi}{2} + i\sin\frac{\pi}{2}\right)$ Find zw in exponential form
5	$z = 1 + \sqrt{3}i$ and $w = 4\left(\cos\frac{\pi}{6} + i\sin\frac{\pi}{6}\right)$ Find zw in exponential form
6	$z = 3\sqrt{2}\left(\cos\frac{3\pi}{8} + i\sin\frac{3\pi}{8}\right)$ and $z = \sqrt{2}i$ Find $\frac{z}{w}$ in exponential form
7	$z = -\sqrt{3} + 3i$ and $w = \sqrt{3}\left(\cos\frac{\pi}{4} + i\sin\frac{\pi}{4}\right)$ Find $\frac{z}{w}$ in exponential form
8	$z = \sqrt{2} + \sqrt{2}i$ and $w = 5\sqrt{3} - 5i$ Find zw in exponential form
9	$z = 5e^{-\frac{i\pi}{3}}$ and $w = 5\sqrt{2}\left(\cos\left(-\frac{\pi}{6}\right) - i\sin\left(-\frac{\pi}{6}\right)\right)$ Find $\frac{w}{z}$ in exponential form
10	$z = \frac{\sqrt{2}}{4} - \frac{\sqrt{2}}{4}i$ and $w = -\frac{\sqrt{6}}{4} + \frac{\sqrt{6}}{4}i$ Find zw in exponential form

A	$\sqrt{2}e^{-\frac{\pi i}{3}}$
B	$20e^{\frac{\pi i}{12}}$
C	$8e^{\frac{\pi i}{2}}$
D	$3e^{-\frac{\pi i}{8}}$
E	$\sqrt{2}e^{\frac{\pi i}{2}}$
F	$\frac{1}{2}e^{\frac{4\pi i}{3}}$
G	$3e^{\frac{\pi i}{2}}$
H	$8e^{\frac{7\pi i}{12}}$
I	$2e^{\frac{5\pi i}{12}}$
J	$\frac{1}{2}e^{\frac{\pi i}{4}}$

1	2	3	4	5	6	7	8	9	10