

Complex Numbers 1 – Answers

1. (a) 8 and 3 (b) 4 and -15 (c) $\cos \theta$ and $-\sin \theta$
(d) -1 and 0 (e) 5 and 2 (f) 8 and 1
2. (a) 12 (b) -34
3. (a) $13 - 5i$ (b) $42 + 58i$
4. (a) $13 + 13i \equiv 13(1 + i)$ (b) 25
5. (a) $b = -7$ (b) $\operatorname{Re}\{b\} = 3$.
6. (a) $5 - 3i$ (b) $-(7 + 2i)$ (c) i
(d) $i^2 = -1$ (e) $(2 + 3i)(-i + 7) = 17 + 19i$
7. (a) 5 (b) 10
9. (a) $2 + i$ (b) $\frac{9 - 13i}{25} \equiv \frac{9}{25} - \frac{13}{25}i$ (c) $-i$