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## Problem 2.8 (Engel)

C. Express  $e^{i\pi}$  in the form  $a+ib$ .

$$a + ib = r \cos \theta + i r \sin \theta$$

$$a = 1 \cos [\pi]$$

$$-1$$

$$b = 1 \sin [\pi]$$

$$0$$

D. Express  $\frac{3\sqrt{2}}{5+\sqrt{3}} e^{i\pi/4}$  in the form  $a+ib$

$$\cos [\pi / 4]$$

$$a = \frac{3\sqrt{2}}{5+\sqrt{3}} \cos [\pi / 4]$$

$$\frac{1}{\sqrt{2}}$$

$$\frac{3}{5+\sqrt{3}}$$

$$\sin [\pi / 4]$$

$$b = \frac{3\sqrt{2}}{5+\sqrt{3}} \sin [\pi / 4]$$

$$\frac{1}{\sqrt{2}}$$

$$\frac{3}{5+\sqrt{3}}$$