

Math 1513 - College Algebra

Quiz #5 - 2018.08.31

Solutions

Perform the following complex division. Be sure to express your final answer in $a + ib$ form:

$$\begin{aligned}\frac{2 - 4i}{3 + 5i} &= \frac{2 - 4i}{3 + 5i} \cdot \frac{3 - 5i}{3 - 5i} \\ &= \frac{(2 - 4i)(3 - 5i)}{(3 + 5i)(3 - 5i)} \\ &= \frac{6 - 10i - 12i + 20i^2}{9 + 25} \\ &= \frac{-14 - 22i}{34} \\ &= -\frac{14}{34} - i\frac{22}{34} \\ &= -\frac{7}{17} - i\frac{11}{17}\end{aligned}$$