219 Complex Numbers on ACT

A14 – 71H

53. The product of 2 numbers is 25. If 1 of the numbers is the complex number $4 + 3i$, what is the other number?

- **A.** $21 - 3i$
- **B.** $\frac{4}{25} + \frac{3}{25}i$
- **C.** $4 - 3i$
- **D.** $100 + 75i$
- **E.** $\frac{100}{7} - \frac{75}{7}i$

A13 – 71F

54. Which of the following complex numbers equals $(6 - 7i)(\pi + 6i)$?

- **F.** $6\pi - 42i$
- **G.** $(6 + \pi) - i$
- **H.** $(6 + \pi) + i$
- **J.** $(6\pi + 42) + (36 - 7\pi)i$
- **K.** $(6\pi - 42) + (36 - 7\pi)i$

J12 – 70C

51. For all pairs of nonzero real numbers a and b, the product of the complex number $a + bi$ and which of the following complex numbers is a real number?

- **A.** abi
- **B.** $a + bi$
- **C.** $a - bi$
- **D.** $b + ai$
- **E.** $b - ai$

J11 – 69F

41. Which of the following complex numbers is a sum of $\sqrt{-48}$ and $\sqrt{-27}$?

- **A.** $-5\sqrt{3}$
- **B.** $-7\sqrt{3}$
- **C.** $5i\sqrt{3}$
- **D.** $7i\sqrt{3}$
- **E.** $25i\sqrt{3}$

D16

57. What is the distance, in coordinate units, between $2 + 6i$ and $-4 + 3i$ in the complex plane?

- **A.** 7
- **B.** 9
- **C.** $\sqrt{13}$
- **D.** $\sqrt{45}$
- **E.** $\sqrt{85}$

Answers:
53. C 54. J 51. C 41. D 57. D