Name: _____ Class: _____ Date: _____ ID: A

MA90 Exercises for section 9.4 Complex Numbers

Short Answer

1. Combine the complex number.

   $(8 + 2i) - 7i$

   .

2. Combine the complex number.

   $(3 + 6i) - (7 + 7i)$

   .

3. Combine the complex number.

   $(7 - 2i) - 8i$

   .

4. Multiply the complex numbers.

   $(5 + i)(8 - i)$

   .

5. Use the FOIL method to multiply $(z + 3i)(z - 3i)$.

   .

6. If $i^2 = -1$, what are i^7 and i^5?

   $i^7 =$ _____

   $i^5 =$ _____

Numeric Response

1. Multiply the complex numbers.

   $(8 + 5i)(8 - 5i)$

   .

2. Multiply the complex numbers.

   $(3 + i)(3 - i)$

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Divide the complex numbers.

$$\frac{4}{2 - 3i}$$

a. $\frac{-4 + 6i}{13}$
b. $\frac{8 - 12i}{6}$
c. $\frac{8 + 12i}{13}$
d. $\frac{8 - 12i}{13}$
e. $\frac{-5 - 3i}{7}$

____ 2. Divide the complex numbers.

$$\frac{-2i}{1+4i}$$

a. $\frac{-8+2i}{17}$

b. $\frac{-8-2i}{17}$

c. $\frac{8-2i}{17}$

d. $\frac{-3-5i}{7}$

e. $\frac{8+6i}{11}$

____ 3. Divide the complex numbers.

$$\frac{-4i}{2-3i}$$

a. $\frac{12+8i}{13}$

b. $\frac{-12-8i}{13}$

c. $-\frac{11i}{13}$

d. $\frac{-12+8i}{13}$

e. $\frac{12-8i}{13}$

MA90 Exercises for section 9.4 Complex Numbers
Answer Section

SHORT ANSWER

1. ANS:
   $8 - 5i$

   PTS: 1
2. ANS:
   $-4 - i$

   PTS: 1
3. ANS:
   $7 - 10i$

   PTS: 1
4. ANS:
   $41 + 3i$

   PTS: 1
5. ANS:
   $z^2 + 9$

   PTS: 1
6. ANS:
   $-i, i$

   PTS: 1

NUMERIC RESPONSE

1. ANS: 89

   PTS: 1
2. ANS: 10

   PTS: 1

MULTIPLE CHOICE

1. ANS: C PTS: 1
2. ANS: B PTS: 1
3. ANS: E PTS: 1