

NAME: \_\_\_\_\_

1. 080407b, P.I. A2.N.9

When simplified,  $i^{27} + i^{34}$  is equal to

- [A]  $i$       [B]  $-i-1$       [C]  $i^{61}$       [D]  $i-1$

2. 060819b, P.I. A2.N.9

The expression  $i^{100} + i^{101} + i^{102}$  equals

- [A]  $-i$       [B]  $-1$       [C]  $1$       [D]  $i$

3. 060315b, P.I. A2.N.9

What is the value of  $i^{99} - i^3$ ?

- [A]  $-i$       [B]  $i^{96}$       [C]  $0$       [D]  $1$

4. 010415b, P.I. A2.N.9

If  $f(x) = x^3 - 2x^2$ , then  $f(i)$  is equivalent to

- [A]  $-2 + i$       [B]  $2 - i$       [C]  $-2 - i$       [D]  $2 + i$

5. 080215b, P.I. A2.N.9

Expressed in simplest form,  $i^{16} + i^6 - 2i^5 + i^{13}$

- [A]  $-1$       [B]  $i$       [C]  $1$       [D]  $-i$

6. 060111b, P.I. A2.N.9

Melissa and Joe are playing a game with complex numbers. If Melissa has a score of  $5 - 4i$  and Joe has a score of  $3 + 2i$ , what is their total score?

- [A]  $8 - 6i$       [B]  $8 + 2i$   
[C]  $8 - 2i$       [D]  $8 + 6i$

7. 060810b, P.I. A2.N.8

What is the sum of  $5 - 3i$  and the conjugate of  $3 + 2i$ ?

- [A]  $8 + 5i$       [B]  $2 + 5i$   
[C]  $2 - 5i$       [D]  $8 - 5i$

8. 060215b, P.I. A2.N.9

What is the sum of  $\sqrt{-2}$  and  $\sqrt{-18}$ ?

- [A]  $5i\sqrt{2}$       [B]  $6i$   
[C]  $4i\sqrt{2}$       [D]  $2i\sqrt{5}$

9. 060401b, P.I. A2.N.9

What is the sum of  $2 - \sqrt{-4}$  and  $-3 + \sqrt{-16}$  expressed in simplest  $a + bi$  form?

- [A]  $-1 + i\sqrt{20}$       [B]  $-14 + i$   
[C]  $-1 + 2i$       [D]  $-1 + 12i$

10. 080507b, P.I. A2.N.9

When expressed as a monomial in terms of  $i$ ,  $2\sqrt{-32} - 5\sqrt{-8}$  is equivalent to

- [A]  $2i\sqrt{2}$       [B]  $-2i\sqrt{2}$   
[C]  $18i\sqrt{2}$       [D]  $2\sqrt{2}i$

11. 080422b, P.I. A2.N.9

Express  $\sqrt{-48} + 3.5 + \sqrt{25} + \sqrt{-27}$  in simplest  $a + bi$  form.

[1] B \_\_\_\_\_

[2] D \_\_\_\_\_

[3] C \_\_\_\_\_

[4] B \_\_\_\_\_

[5] D \_\_\_\_\_

[6] C \_\_\_\_\_

[7] D \_\_\_\_\_

[8] C \_\_\_\_\_

[9] C \_\_\_\_\_

[10] B \_\_\_\_\_

[2]  $8.5 + 7i\sqrt{3}$ , and appropriate work is shown.

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1]  $8.5 + 7i\sqrt{3}$ , but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[11] incorrect procedure. \_\_\_\_\_