

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Module Test **B**

**Module 17**
**Fill in the blanks.**

- The conjugate of  $\sqrt{2} - 4$  is \_\_\_\_\_.
- The conjugate of  $\sqrt{3} - \sqrt{5}$  is \_\_\_\_\_.
- The radical expression  $\sqrt[3]{2x^3}$  can be simplified as \_\_\_\_\_.
- The radical expression  $\sqrt{5x^2}$  can be simplified as \_\_\_\_\_.

**Determine whether each statement is true or false.**

- |   |   |
|---|---|
| 5. The radical expression $\sqrt{-9}$ is the real number $-3$ .<br>_____          | 6. The radical expression $-\sqrt{49}$ is a real number $-7$ .<br>_____   |
| 7. The radical expression $\sqrt{9^2}$ equals 9.<br>_____                         | 8. The radical expression $\sqrt{(-5)^2}$ equals $-5$ .<br>_____          |
| 9. The radical expression $\sqrt{7} + \sqrt{28}$ is in simplest form.<br>_____    | 10. The product $\sqrt{x} \cdot \sqrt{x}$ is $x$ , for all $x$ .<br>_____ |
| 11. The fraction $\frac{\sqrt{18}}{\sqrt{6}}$ simplifies to $\sqrt{3}$ .<br>_____ | 12. The fraction $\frac{\sqrt{6}}{2}$ simplifies to $\sqrt{3}$ .<br>_____ |

**Choose the simplest form of the given value.**

- $\sqrt{64}$ 
  - 32
  - 8
  - 4
  - $6\sqrt{12}$
- $\sqrt[3]{-27}$ 
  - $-3$
  - 3
  - not a real number
  - $-3\sqrt[3]{9}$
- 300
  - $4\sqrt{75}$
  - $5\sqrt{12}$
  - $10\sqrt{3}$
  - 150

16.  $\sqrt[3]{72}$

- a.  $2\sqrt[3]{9}$       b.  $2\sqrt[3]{3}$       c.  $2\sqrt{9}$       d. 6

17.  $\frac{3}{\sqrt{6}}$

- a.  $\frac{1}{\sqrt{2}}$       b.  $\sqrt{2}$       c.  $\sqrt{3}$       d.  $\frac{\sqrt{6}}{2}$

**Simplify the following expressions.**

18.  $7\sqrt{5} - 4\sqrt{5}$

\_\_\_\_\_

19.  $4\sqrt[3]{7} + \sqrt[3]{7}$

\_\_\_\_\_

20.  $5\sqrt[3]{16} + 2\sqrt[3]{54}$

\_\_\_\_\_

21.  $\sqrt[3]{6k^2} \cdot \sqrt[3]{36k}$

\_\_\_\_\_

22.  $\sqrt{5}(\sqrt{3} + 2\sqrt{5})$

\_\_\_\_\_

23.  $(\sqrt{2} - \sqrt{7})^2$

\_\_\_\_\_

24.  $(\sqrt{3} + \sqrt{2})(\sqrt{3} - \sqrt{2})$

\_\_\_\_\_

25.  $\frac{\sqrt{3}}{\sqrt{3} + \sqrt{2}}$

\_\_\_\_\_

26.  $\frac{5}{\sqrt{18}}$

\_\_\_\_\_

**Answer the following questions.**

27. Explain how a denominator with one term, containing a radical, is rationalized.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

28. Explain how a denominator with two terms, containing at least one radical, is rationalized.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

