

## Ms. Chan Practice Q 7.1-7.6 Algebra 2

**Multiple Choice**

Identify the letter of the choice that best completes the statement or answers the question.

**Simplify the radical expression. Use absolute value symbols if needed.**

1.  $\sqrt[4]{625x^{28}y^8}$   
a.  $25x^{49}|y^4|$  b.  $25|x^{49}|y^4$  c.  $5x^7|y^2|$  d.  $5|x^7|y^2$

**Multiply and simplify if possible.**

2.  $\sqrt[4]{5} \cdot \sqrt[4]{-5}$   
a.  $-5$  b.  $5$  c.  $5\sqrt[4]{-5}$  d. not possible
3. Simplify  $\sqrt[3]{32a^{10}b^{15}}$ . Assume that all variables are positive.  
a.  $2a^3b^5\sqrt[3]{4a}$  b.  $4a^3b^5\sqrt[3]{2a}$  c.  $2a^3b^3\sqrt[3]{a}$  d. none of these
4. Multiply and simplify  $\sqrt[3]{6x^2} \cdot \sqrt[3]{7x^7}$ . Assume that all variables are positive.  
a.  $x^3 \cdot \sqrt[3]{42}$  b.  $\sqrt[3]{42x^9}$  c.  $x^3 \cdot \sqrt[3]{42x^9}$  d. none of these

**Divide and simplify.**

5.  $\frac{\sqrt[3]{675}}{\sqrt[3]{5}}$   
a.  $5\sqrt[3]{3}$  b.  $\sqrt[3]{675}$  c.  $3\sqrt{5}$  d.  $3\sqrt[3]{5}$

**Rationalize the denominator of the expression. Assume that all variables are positive.**

6.  $\frac{\sqrt[3]{11}}{\sqrt[3]{4}}$   
a.  $\frac{\sqrt[3]{44}}{4}$  b.  $\frac{\sqrt[3]{176}}{4}$  c.  $4\sqrt[3]{44}$  d. none of these
7.  $\frac{\sqrt{7x^{11}y^8}}{\sqrt{6x^3y^3}}$   
a.  $\frac{x^4y^2\sqrt{42y}}{6}$  b.  $\frac{\sqrt{42x^{14}y^{11}}}{6x^3y^3}$  c.  $6x^4y^2\sqrt{42y}$  d. none of these

**Add if possible.**

8.  $2\sqrt[4]{10x} + 4\sqrt[4]{10x}$   
a.  $60\sqrt[4]{10x}$  b.  $6\sqrt[4]{10x}$  c.  $6\sqrt[4]{20x}$  d. not possible to simplify

**Subtract if possible.**

9.  $3^4\sqrt{7a} - 6^4\sqrt{7a}$   
a.  $-21^4\sqrt{7a}$  b.  $-3^4\sqrt{7a}$  c.  $9^4\sqrt{7a}$  d. not possible to simplify

**Simplify.**

10.  $-\sqrt{2} + 6\sqrt{16} + 4\sqrt{2}$   
a.  $3\sqrt{2} + 24$  b.  $3\sqrt{2} + 6\sqrt{16}$  c.  $-3\sqrt{2} + 24$  d. none of these
11.  $7^{\frac{1}{3}} \cdot 49^{\frac{1}{3}}$   
a.  $\sqrt{7}$  b. 7 c.  $\sqrt[3]{7}$  d. 49
12.  $8^{\frac{4}{3}}$   
a.  $\sqrt[3]{8^4}$  b. 512 c. 4,096 d. 16

**Multiply.**

13.  $(6 - \sqrt{6})(7 + \sqrt{6})$   
a.  $36 - \sqrt{6}$  b.  $48 + 42\sqrt{6}$  c.  $36 + 42\sqrt{6}$  d.  $7 + 13\sqrt{6}$
14.  $(2 - \sqrt{3})^2$   
a.  $4 + 4\sqrt{3}$  b.  $1 - 2\sqrt{3}$  c.  $7 + 4\sqrt{3}$  d.  $7 - 4\sqrt{3}$
15.  $(\sqrt{6} + \sqrt{2})(\sqrt{6} - \sqrt{2})$   
a. 8 b.  $-4\sqrt{6}$  c.  $4\sqrt{2}$  d. 4
16. Write  $(8a^{-6})^{-\frac{2}{3}}$  in simplest form.  
a.  $\frac{a^4}{4}$  b.  $4a^4$  c.  $\frac{1}{4a^4}$  d. none of these

**Solve the equation.**

17.  $\sqrt{x+5} - 3 = 2$   
a. 25 b. 20 c. 0 d. 30
18.  $2(8-x)^{\frac{3}{4}} - 6 = 122$   
a. -248 b. 248 c. + and -248 d. none of the above

**Solve. Check for extraneous solutions.**

19.  $4x = \sqrt{18 - 12x}$   
a.  $-\frac{3}{4}$  b.  $\frac{3}{4}$  and  $-\frac{3}{2}$  c.  $-\frac{3}{2}$  d.  $\frac{3}{4}$
20. Let  $f(x) = -12x - 20$  and  $g(x) = 6x - 14$ . Find  $f(x) - g(x)$ .  
a.  $-18x - 34$  b.  $-18x - 6$  c.  $-6x + 6$  d.  $-6x - 34$
21. Let  $f(x) = 4x - 16$  and  $g(x) = x - 4$ . Find  $\frac{f}{g}$  and its domain.  
a. 4; all real numbers b. 4; all real numbers except  $x = 4$  c. 1; all real numbers d.  $-4$ ; all real numbers except  $x = 4$
22. Let  $f(x) = -4x - 6$  and  $g(x) = 2x - 3$ . Find  $(f \circ g)(4)$ .  
a. 5 b.  $-26$  c.  $-22$  d.  $-47$
23. Let  $f(x) = x^2 + 8$  and  $g(x) = \frac{x + 30}{x}$ . Find  $(g \circ f)(-10)$ .  
a.  $-12$  b. 12 c.  $\frac{74}{5}$  d.  $\frac{-74}{5}$
24. Let  $f(x) = 3x - 2$  and  $g(x) = 4x - 7$ . Find  $f(x) + g(x)$ .  
a.  $-x - 9$  b.  $-x + 5$  c.  $7x + 5$  d.  $7x - 9$
25. Let  $f(x) = 7x + 3$  and  $g(x) = 4x + 2$ . Find  $f \cdot g$  and its domain.  
a.  $28x^2 + 26x + 6$ ; all real numbers except  $x = -\frac{1}{2}$  b.  $21x^2 + 2x + 8$ ; all real numbers c.  $28x^2 + 26x + 6$ ; all real numbers d.  $21x^2 + 2x + 8$ ; all real numbers except  $x = -\frac{3}{7}$

**Ms. Chan      Practice Q 7.1-7.6**  
**Answer Section**

**Algebra 2**

**MULTIPLE CHOICE**

1. ANS: D	DIF: L2	REF: 7-1 Roots and Radical Expressions
2. ANS: D	DIF: L1	REF: 7-2 Multiplying and Dividing Radical Expressions
3. ANS: A	DIF: L1	REF: 7-2 Multiplying and Dividing Radical Expressions
4. ANS: A	DIF: L1	REF: 7-2 Multiplying and Dividing Radical Expressions
5. ANS: D	DIF: L1	REF: 7-2 Multiplying and Dividing Radical Expressions
6. ANS: A	DIF: L1	REF: 7-2 Multiplying and Dividing Radical Expressions
7. ANS: A	DIF: L2	REF: 7-2 Multiplying and Dividing Radical Expressions
8. ANS: B	DIF: L1	REF: 7-3 Binomial Radical Expressions
9. ANS: B	DIF: L1	REF: 7-3 Binomial Radical Expressions
10. ANS: A	DIF: L1	REF: 7-3 Binomial Radical Expressions
11. ANS: B	DIF: L1	REF: 7-4 Rational Exponents
12. ANS: D	DIF: L1	REF: 7-4 Rational Exponents
13. ANS: A	DIF: L1	REF: 7-3 Binomial Radical Expressions
14. ANS: D	DIF: L1	REF: 7-3 Binomial Radical Expressions
15. ANS: D	DIF: L1	REF: 7-3 Binomial Radical Expressions
16. ANS: A	DIF: L1	REF: 7-4 Rational Exponents
17. ANS: B	DIF: L1	REF: 7-5 Solving Radical Equations
18. ANS: A	DIF: L2	REF: 7-5 Solving Radical Equations
19. ANS: D	DIF: L1	REF: 7-5 Solving Radical Equations
20. ANS: B	DIF: L1	REF: 7-6 Function Operations
21. ANS: B	DIF: L1	REF: 7-6 Function Operations
22. ANS: B	DIF: L1	REF: 7-6 Function Operations
23. ANS: D	DIF: L2	REF: 7-6 Function Operations
24. ANS: D	DIF: L1	REF: 7-6 Function Operations
25. ANS: C	DIF: L1	REF: 7-6 Function Operations