Name: _____ **Hour:** _____**ID: D**

6-4 Quiz

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

Find the real-number root.

____ 1. $\sqrt{2.56}$
a. 6.55
b. 1.28
c. 1.6
d. no real number root

____ 2. $\sqrt{-1.21}$
a. 1.1
b. –0.605
c. –1.1
d. no real number root

____ 3. $\sqrt[3]{-\frac{125}{343}}$
a. $\frac{25}{49}$
b. $-\frac{125}{343}$
c. $-\frac{125}{1029}$
d. $-\frac{5}{7}$

What is a simpler form of the radical expression?

____ 4. $\sqrt[4]{625x^{12}y^{32}}$
a. $5|x^3|y^8$
b. $25x^9\left|y^{64}\right|$
c. $5x^3\left|y^8\right|$
d. $25|x^9|y^{64}$

____ 5. $\sqrt[3]{125x^9y^6}$
a. $5x^3y^2$
b. $15|x^9|y^6$
c. $5x^3\left|y^2\right|$
d. $15x^9\left|y^6\right|$

____ 6. The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. Find the radius, to the nearest hundredth, of a cone with a height of 3 in. and a volume of 19 in.^{3}.

a. 1.42 in.
b. 2.46 in.
c. 6.05 in.
d. 4.06 in.

Multiply and simplify if possible.

____ 7. $\sqrt[4]{5} \cdot \sqrt[4]{11}$

a. $5\sqrt[4]{11}$
b. 5
c. 11
d. $\sqrt[4]{55}$

____ 8. $\sqrt{7x}\left(\sqrt{x} - 7\sqrt{7}\right)$

a. $x\sqrt{7} - 49\sqrt{x}$
b. $\sqrt{7x} - 49x$
c. $x\sqrt{7} - x\sqrt{49}$
d. $-\sqrt{42x}$

What is the simplest form of the product?

____ 9. $\sqrt[3]{4x^2} \cdot \sqrt[3]{9x^4}$

a. $x^2 \cdot \sqrt[3]{36x^6}$
b. $x^2 \cdot \sqrt[3]{36}$
c. $\sqrt[3]{36x^6}$
d. none of these

____ 10. $\dfrac{\sqrt{6x^8y^{12}}}{\sqrt{7x^2y^3}}$

a. $7x^3y^4\sqrt{42y}$
b. $\dfrac{\sqrt{42x^{10}y^{15}}}{7x^2y^3}$
c. $\dfrac{x^3y^4\sqrt{42y}}{7}$
d. none of these

What is the simplest form of the radical expression?

____ 11. $6\sqrt[4]{6x} + 6\sqrt[4]{6x}$

a. $12\sqrt[4]{6x}$
b. $12\sqrt[4]{12x}$
c. $72\sqrt[4]{6x}$
d. not possible to simplify

____ 12. $3\sqrt{6x} + 2\sqrt{3x}$

a. $30\sqrt{3x}$
b. $30\sqrt{6x}$
c. $5\sqrt{9x}$
d. not possible to simplify

____ 13. A garden has width $\sqrt{14}$ and length $4\sqrt{14}$. What is the perimeter of the garden in simplest radical form?

a. $5\sqrt{14}$ units
b. 56 units
c. $8\sqrt{14}$ units
d. $10\sqrt{14}$ units

What is the product of the radical expression?

____ 14. $\left(-2 - \sqrt{10}\right)\left(6 + \sqrt{10}\right)$

a. $-22 - 8\sqrt{10}$
b. $-22 - 12\sqrt{10}$
c. $-2 - 12\sqrt{10}$
d. $-6 + 4\sqrt{10}$

____ 15. $\left(-4 - \sqrt{6}\right)^2$

a. $22 + 8\sqrt{6}$
b. $16 - 8\sqrt{6}$
c. $-14 + 4\sqrt{6}$
d. $22 - 8\sqrt{6}$

____ 16. $\left(3 - \sqrt{2}\right)\left(3 + \sqrt{2}\right)$

a. 2
b. 7
c. 11
d. 3

How can you write the expression with rationalized denominator?

____ 17. $\dfrac{\sqrt{3}-\sqrt{6}}{\sqrt{3}+\sqrt{6}}$

a. $\dfrac{-1-2\sqrt{18}}{3}$

b. $\dfrac{-3-2\sqrt{18}}{9}$

c. $-3+2\sqrt{2}$

d. $9-2\sqrt{18}$

Simplify.

____ 18. $19^{\frac{1}{2}} \cdot 19^{\frac{1}{2}}$

a. 19

b. $\sqrt{19}$

c. 1

d. $19^{\frac{1}{4}}$

____ 19. Write the exponential expression $8x^{\frac{8}{3}}$ in radical form.

a. $8^{\frac{8}{3}}\sqrt[3]{x^8}$

b. $8\sqrt[8]{x^3}$

c. $8\sqrt[3]{x^8}$

d. $\sqrt[3]{8x^8}$

____ 20. Write $(27a^{-3})^{-\frac{2}{3}}$ in simplest form.

a. $\dfrac{1}{9a^2}$

b. $\dfrac{a^2}{9}$

c. $9a^2$

d. none of these

6-4 Quiz
Answer Section

MULTIPLE CHOICE

1. C
2. D
3. D
4. A
5. A
6. B
7. D
8. A
9. B
10. C
11. A
12. D
13. D
14. A
15. A
16. B
17. C
18. A
19. C
20. B