

Chapter 4 Review

___ 1. Which is the simplest form of $-6\sqrt{3} - 4\sqrt{3} - 7\sqrt{3}$?

- a. $17\sqrt{9}$
- b. $-17\sqrt{3}$
- c. $-5\sqrt{3}$
- d. $17\sqrt{27}$

___ 2. Which is the simplest form of $\sqrt{72} + \sqrt{32} + \sqrt{8}$?

- a. $12\sqrt{8}$
- b. $6\sqrt{8}$
- c. $12\sqrt{2}$
- d. $8\sqrt{2}$

___ 3. Which expression is the simplest form of $\sqrt{3} \cdot \sqrt{21}$?

- a. $\sqrt{3} \cdot 7\sqrt{3}$
- b. 7.9
- c. $\sqrt{63}$
- d. $3\sqrt{7}$

___ 4. Simplify: $\sqrt{12x^3}$

- a. $x\sqrt{12x}$
- b. $4x\sqrt{3x}$
- c. $2\sqrt{3x}$
- d. $2x\sqrt{3x}$

___ 5. Which expression is the rationalized form of $\frac{-\sqrt{2}}{3\sqrt{54}}$?

- a. $\frac{-27}{\sqrt{3}}$
- b. $\frac{-1}{9\sqrt{3}}$
- c. $\frac{-\sqrt{6}}{54}$
- d. $\frac{-\sqrt{3}}{27}$

___ 6. Which expression is the rationalized form of $\frac{\sqrt{x^8}}{\sqrt{x^8}}$ in simplest form?

- a. $\frac{x\sqrt{x}}{\sqrt{x^8}}$
- b. $\frac{x\sqrt{x}}{\sqrt{x^8}}$
- c. $x^4\sqrt{x}$
- d. $x^4\sqrt{x}$

___ 7. Which restrictions apply to the variable in $\sqrt{15x^3}$?

- a. $x > 0, x \in R$
- b. $x \geq 0, x \in R$
- c. $x \in R$
- d. $x \leq 0, x \in R$

___ 8. Which restrictions apply to the variable in $\frac{-2\sqrt{x^2}}{11\sqrt{x^3}}$?

- a. $x > 0, x \in R$
- b. $x \geq 0, x \in R$
- c. $x \in R$
- d. $x \leq 0, x \in R$

9. Express as a mixed radical in simplest form.

- a) $\sqrt{12}$ b) $3\sqrt{108}$ c) $-4\sqrt{81}$

10. Express as an entire radical.

- a) $-2\sqrt[3]{21}$ b) $-2\sqrt[3]{10}$ c) $3\sqrt{8}$

11. Perform the indicated operation. (12 marks)

(A) $8\sqrt{20} - 2\sqrt{45} - 3\sqrt{80}$

(B) $(2\sqrt{8} - 3\sqrt{8})^2$

(C) $\frac{2 + \sqrt{8}}{\sqrt{3}}$

(D) $-2\sqrt{6}(\sqrt{8} + 3\sqrt{12})$

12. Perform the indicated operation and **state the restrictions**.

(A) $\frac{-48\sqrt{y^7}}{6\sqrt{y^8}}$

restriction:

(B) $\frac{6 + \sqrt{x^8}}{\sqrt{x}}$

restriction:

(C) $4\sqrt{x(5\sqrt{x^3} - 3\sqrt{x^3})}$

restriction:

(D) $5\sqrt{y(-3\sqrt{12y^4})}$

restriction:

13. State the restrictions, solve and check the following:

a) $\sqrt{2x+4} = 8$

b) $6\sqrt{2x} = 12$

c) $\sqrt[3]{x-20} + 5 = 2.$

d) $\frac{1}{2}\sqrt{5x-2} = 4$

e) $5\sqrt{3x} + 1 = 7$