

MATH 2201
TEST # 1

UNIT 1: RADICALS

NAME: _____

PART A: MULTIPLE CHOICE (Value: 12)

Choose the correct answer and place its letter in the space at the right.

1. Express in simplest form: $\sqrt{48}$ 1. _____

- (A) $16\sqrt{3}$ (B) $4\sqrt{3}$ (C) $6\sqrt{8}$ (D) $2\sqrt{3}$

2. Evaluate: $\sqrt{36} - \sqrt[3]{27}$ 2. _____

- (A) -9 (B) 9 (C) -3 (D) 3

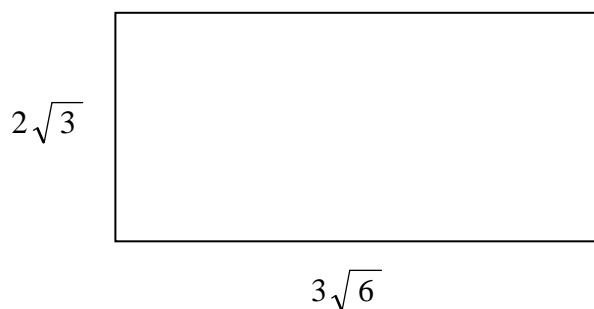
3. Express $2\sqrt[3]{3}$ as an entire radical. 3. _____

- (A) $\sqrt[3]{24}$ (B) $\sqrt[3]{12}$ (C) $\sqrt[3]{18}$ (D) $\sqrt[3]{54}$

4. Simplify: $\sqrt{28} + \sqrt{63}$ 4. _____

- (A) $13\sqrt{7}$ (B) $11\sqrt{7}$ (C) $7\sqrt{7}$ (D) $5\sqrt{7}$

5. Determine the area of the given rectangle in simplest form. 5. _____



- (A) $18\sqrt{2}$ (B) $6\sqrt{2}$ (C) $9\sqrt{2}$ (D) $54\sqrt{2}$

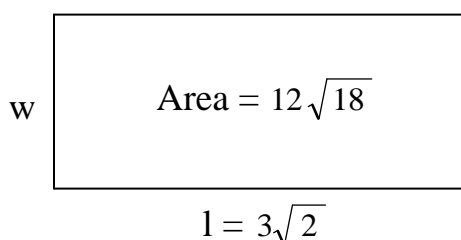
6. Simplify: $(\sqrt{3} - \sqrt{2})^2$ 6. _____

- (A) $1 + 2\sqrt{6}$ (B) $1 - 2\sqrt{6}$ (C) $5 - 2\sqrt{6}$ (D) $5 + 2\sqrt{6}$

7. Rationalize the denominator: $\frac{6}{\sqrt{3}}$ 7. _____

- (A) $6\sqrt{3}$ (B) $2\sqrt{3}$ (C) $18\sqrt{3}$ (D) $3\sqrt{3}$

8. Determine the width, w, of the given rectangle. 8. _____



- (A) 12 (B) 27
(C) 36 (D) 81

9. Simplify: $2\sqrt{75x^2}$ 9._____

- (A) $50x^2\sqrt{3}$ (B) $10x^2\sqrt{3}$ (C) $50x\sqrt{3}$ (D) $10x\sqrt{3}$

10. Simplify: $\frac{\sqrt{27x^5}}{\sqrt{3x}}$ 10._____

- (A) $9x^4$ (B) $3x^4$ (C) $9x^2$ (D) $3x^2$

11. Solve for x: $\sqrt[3]{2x} = -2$ 11._____

- (A) $x = -4$ (B) $x = 4$ (C) $x = -3$ (D) $x = -1$

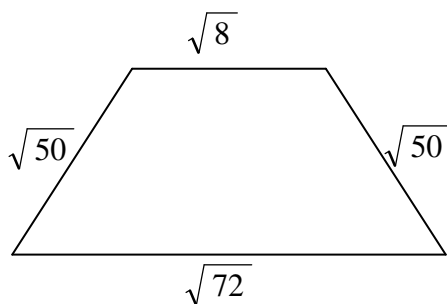
12. Solve for x: $2\sqrt{x+4} = 10$ 12._____

- (A) $x = 1$ (B) $x = 9$ (C) $x = 21$ (D) $x = 29$

PART B: QUESTIONS (Value: 31)

Answer all questions in the space provided. Make certain to show workings to ensure full marks!

13. Express the perimeter of the given diagram in simplest radical form. (5)



14. Solve the following radical equation. (4)

$$\sqrt{2x-6} + 7 = 15$$

15. Perform the operations indicated and express the answer in simplest radical form.

(a) $3\sqrt{45} - 2\sqrt{27} - 2\sqrt{20} + \sqrt{12}$ (5)

(b) $\sqrt{2x} (2\sqrt{45x^3} + 2x\sqrt{20x})$ (5)

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

(d) $\frac{3\sqrt{12} - 2\sqrt{27}}{3\sqrt{2}}$ (6)

ANSWERS:

1. B 2. D 3. A 4. D 5. A 6. C 7. B 8. A 9. D 10. D 11. A 12. C

13. $18\sqrt{2}$

14. $x = 35$

15.(a) $5\sqrt{5} - 4\sqrt{3}$

(b) $10x^2\sqrt{10x}$

(c) $4 + 3\sqrt{6}$

(d) 0