

BASIC ALGEBRA EXAM 5 TR* NAME _____

Show all work on this test or on separate paper.

Turn in all work sheets. CALCULATORS are required!

In 1-27, give simplest radical form:

1. $\sqrt{64}$ 2. $\sqrt{x^{10}}$ 3. $\sqrt{64x^6y^4}$ 4. $\sqrt{9x^{20}y^{16}}$

5. $\sqrt{20}$ 6. $\sqrt{50}$ 7. $\sqrt{98}$ 8. $\sqrt{48}$

9. $\sqrt{200}$ 10. $\sqrt{72}$ 11. $\sqrt{8x^6y^3}$ 12. $\sqrt{36x^5y^9}$

13. $\sqrt{27x^8y}$ 14. $\sqrt{75x^{11}y^{12}}$ 15. $\sqrt[3]{72}$ 16. $\sqrt[3]{250}$

17. $\sqrt{8} + \sqrt{200}$ 18. $5\sqrt{12} + 4\sqrt{300}$

19. $3\sqrt{20} - 8\sqrt{125}$ 20. $\sqrt{10} \cdot \sqrt{15}$

21. $\sqrt{33} \cdot \sqrt{55}$

22. $5\sqrt{2} \cdot 8\sqrt{3}$

23. $2\sqrt{7}(4\sqrt{3} + 5\sqrt{2})$

24. $2\sqrt{6}(4\sqrt{3} + 5\sqrt{2})$

25. $(3 - \sqrt{5})(8 + \sqrt{5})$

26. $(4\sqrt{2} + 3\sqrt{5})^2$

27. $(4\sqrt{2} - 3\sqrt{6})(3\sqrt{2} - 5\sqrt{6})$

28. Find the calculator value for:

a) $\sqrt{33} \cdot \sqrt{55}$

b) $(4\sqrt{2} + 3\sqrt{5})^2$

c) $(4\sqrt{2} - 3\sqrt{6})(3\sqrt{2} - 5\sqrt{6})$

BASIC ALGEBRA EXAM 5T* NAME

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Turn in all work sheets. No CALCULATORS.

In 1-27, give simplest radical form:

1. $\sqrt{64}$ 2. $\sqrt{x^{10}}$ 3. $\sqrt{64x^6y^4}$ 4. $\sqrt{9x^{20}y^{16}}$

5. $\sqrt{20}$ 6. $\sqrt{50}$ 7. $\sqrt{98}$ 8. $\sqrt{48}$

9. $\sqrt{200}$ 10. $\sqrt{72}$ 11. $\sqrt{8x^6y^3}$ 12. $\sqrt{36x^5y^9}$

13. $\sqrt{27x^8y}$ 14. $\sqrt{75x^{11}y^2}$ 15. $\sqrt[3]{72}$ 16. $\sqrt[3]{250x^6y^8}$ ^{E.C.}

17. $\sqrt{8} + \sqrt{200}$ 18. $5\sqrt{12} + 4\sqrt{300}$

19. $3\sqrt{20} - 8\sqrt{125}$ 20. $\sqrt{10} \cdot \sqrt{15}$

21. $\sqrt{33} \cdot \sqrt{55}$

22. $5\sqrt{2} \cdot 8\sqrt{3}$

23. $2\sqrt{7}(4\sqrt{3} + 5\sqrt{2})$

24. $2\sqrt{6}(4\sqrt{3} + 5\sqrt{2})$

25. $(3 - \sqrt{5})(8 + \sqrt{5})$

26. $(4\sqrt{2} + 3\sqrt{5})^2$

27. $(4\sqrt{2} - 3\sqrt{6})(3\sqrt{2} - 5\sqrt{6})$

BASIC ALGEBRA EXAM 5 T* Solutions

1. $\sqrt{64} = 8$ 2. $\sqrt{x^{10}} = x^5$ 3. $\sqrt{64x^6y^4} = 8x^3y^2$ 4. $\sqrt{9x^{20}y^{16}} = 3x^{10}y^8$

5. $\sqrt{20} = \sqrt{4} \cdot \sqrt{5} = 2\sqrt{5}$ 6. $\sqrt{50} = \sqrt{25} \cdot \sqrt{2} = 5\sqrt{2}$ 7. $\sqrt{98} = \sqrt{49} \cdot \sqrt{2} = 7\sqrt{2}$

8. $\sqrt{48} = \sqrt{16} \cdot \sqrt{3} = 4\sqrt{3}$ 9. $\sqrt{200} = \sqrt{100} \cdot \sqrt{2} = 10\sqrt{2}$ 10. $\sqrt{72} = \sqrt{36} \cdot \sqrt{2} = 6\sqrt{2}$

11. $\sqrt{8x^6y^3} = \sqrt{4x^6y^2} \cdot \sqrt{2y} = 2x^3y \sqrt{2y}$ 12. $\sqrt{36x^8y^9} = \sqrt{36x^4y^8} \cdot \sqrt{xy} = 6x^2y^4 \sqrt{xy}$

13. $\sqrt{27x^8y} = \sqrt{9x^8} \cdot \sqrt{3y} = 3x^4 \sqrt{3y}$ 14. $\sqrt{75x^{11}y^{12}} = \sqrt{25x^{10}y^{12}} \cdot \sqrt{3x} = 5x^5y^6 \sqrt{3x}$ 15. $\sqrt[3]{72} = \sqrt[3]{8 \cdot 9} = 2\sqrt[3]{9}$ 16. $\sqrt[3]{250x^6y^8} = \sqrt[3]{125x^6y^6} \cdot \sqrt[3]{2y^2} = 5x^2y^2 \sqrt[3]{2y^2}$

17. $\sqrt{8} + \sqrt{200} = \sqrt{4} \cdot \sqrt{2} + \sqrt{100} \cdot \sqrt{2} = 2\sqrt{2} + 10\sqrt{2} = 12\sqrt{2}$ 18. $5\sqrt{12} + 4\sqrt{300} = 5 \cdot \sqrt{4} \cdot \sqrt{3} + 4 \cdot \sqrt{100} \cdot \sqrt{3} = 10\sqrt{3} + 40\sqrt{3} = 50\sqrt{3}$ 19. $3\sqrt{20} - 8\sqrt{125} = 3\sqrt{4} \cdot \sqrt{5} - 8\sqrt{25} \cdot \sqrt{5} = 6\sqrt{5} - 40\sqrt{5} = -34\sqrt{5}$

20. $\sqrt{10} \cdot \sqrt{15} = \sqrt{5 \cdot 2 \cdot 5 \cdot 3} = \sqrt{25} \cdot \sqrt{6} = 5\sqrt{6}$ 21. $\sqrt{33} \cdot \sqrt{55} = \sqrt{3 \cdot 11 \cdot 5 \cdot 11} = \sqrt{11^2} \cdot \sqrt{15} = 11\sqrt{15}$ 22. $5\sqrt{2} \cdot 8\sqrt{3} = 40\sqrt{6}$ 23. $2\sqrt{7}(4\sqrt{3} + 5\sqrt{2}) = 8\sqrt{21} + 10\sqrt{14}$

24. $2\sqrt{6}(4\sqrt{3} + 5\sqrt{2}) = 8\sqrt{18} + 10\sqrt{12} = 8 \cdot \sqrt{9} \cdot \sqrt{2} + 10 \cdot \sqrt{4} \cdot \sqrt{3} = 24\sqrt{2} + 20\sqrt{3}$ 25. $(3 - \sqrt{5})(8 + \sqrt{5}) = 24 + 3\sqrt{5} - 8\sqrt{5} - 5 = 19 - 5\sqrt{5}$ 26. $(4\sqrt{2} + 3\sqrt{5})(4\sqrt{2} + 3\sqrt{5}) = 16 \cdot 2 + 12\sqrt{10} + 12\sqrt{10} + 9 \cdot 5 = 77 + 24\sqrt{10}$

27. $(4\sqrt{2} - 3\sqrt{6})(3\sqrt{2} - 5\sqrt{6}) = 12 \cdot 2 - 20\sqrt{12} - 9\sqrt{12} + 15 \cdot 6 = 24 - 29\sqrt{12} + 90 = 114 - 29 \cdot 2\sqrt{3} = 114 - 58\sqrt{3}$