BASIC ALGEBRA FINAL EXAM C* NAME _____

SHOW ALL WORK ON THIS TEST OR ON SEPARATE PAPER. Circle answers.

1. $-6 + 0 \div 6$

2. -6^2

3. **Solve for x:**

$-3x + 24 = -3(4 + x)$

4. **Find three consecutive odd numbers such that first plus twice the second plus three times the third is equal to 70.**

5. **A box contains $9.45 in quarters nickels, and dimes. There are twice as many dimes as quarters, and two more nickels than dimes. How many of each coin are there?**

6. **Solve for x, and graph:**

$$-3 \le \frac{5 - 2x}{3} < 1$$

7. **Multiply:** $(x - 4)(x^2 - 3x - 5)$

In 8 – 10, factor completely.

8. **Express as product of primes: 9800**

9. $x^2 - 10xy + 25y^2$

10. $x^2 - 19x + 48$

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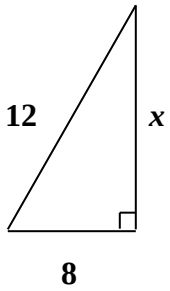
11. Solve for x:

$x^2 = 3x + 28$

12. Solve for x :



8

13. Factor by grouping:

$x^3 - 6x^2 - 25x + 150 = 0$

14. Express in scientific notation:

a) 240,000,000 b) 0.00024

15. $\dfrac{12x^2 - 24x}{x^2 + 6x - 16}$

16. $\dfrac{x^2 - 2x + 1}{x^2 + 6x - 7} \times \dfrac{x^2 + 3x - 28}{x^2 + 3x - 4}$

17. $\dfrac{9}{8x^2y} - \dfrac{7}{10xy^2}$

18. $\dfrac{10}{x^2 + 7x + 10} + \dfrac{15}{x^2 + 2x - 15}$

19. Solve for x: $cx = bx + a$

20. Solve : $\dfrac{x}{2} = \dfrac{3x - 8}{x - 4}$

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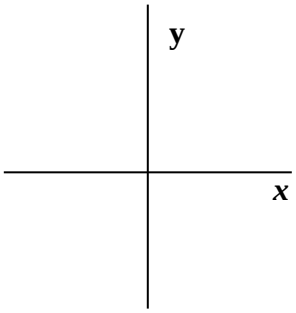
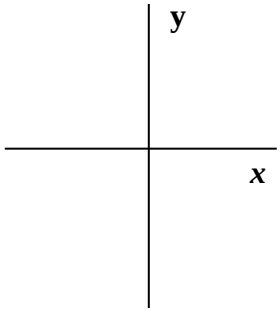
21. Graph: $y = -2x - 4$



22. Graph: $3x - 2y = -12$



23. Find the slope, the *x* -intercept, and the y-intercept: $y = 6x - 6$

24. Find the slope of the line between (–2, 5) and (4, –3).

25. Solve the system:

$$y = -3x + 9$$
$$3x + y = -9$$

26. Simplify: $\sqrt{60}$

27. Simplify: $\sqrt[3]{40}$

28. Simplify: $\sqrt{54x^9y^4}$

29. Simplify:

$$8\sqrt{50} + 3\sqrt{98}$$

30. Simplify:

$$(6\sqrt{3} - 3\sqrt{6})^2$$

31. Calculate the value:

$$(6\sqrt{3} - 3\sqrt{6})^2$$