

# BASIC ALGEBRA PRACTICE FINAL A\* NAME \_\_\_\_\_

SHOW ALL WORK ON THIS TEST OR ON SEPARATE PAPER. Circle answers.  
TURN IN ALL WORKSHEETS. CALCULATORS ARE PERMITTED ON THIS TEST.

1.  $6 + 4 \div 2^2$       2.  $-3(2x - 5) = 7 - 4(x - 6)$       3. If  $x = -5$  and  $y = 3$ ,  
find the value of  $x^2 - y^2$ .

4. The perimeter of a rectangle is 700 meters. The length is 10 less than twice the width. Find the length and width.
5. A box contains \$8.70 in quarters and dimes. There are a total of 42 coins. How many of each are there?

6. Solve for  $x$ , and graph:  
 $4 - 2(x - 5) = 4x - 16$
7. Multiply:  $(3x - 5)^2$

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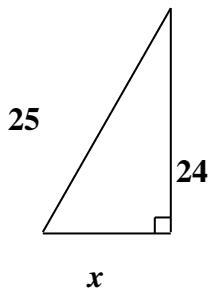
In 8 - 10, factor completely.

8.  $12x^2y - 18xy^2$       9.  $y^4 - 16y^2$       10.  $x^2 - 16x + 48$

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11. Factor by grouping:  $x^3 - 2x^2 - 49x + 98$

12. Solve for  $x$ :  $x^2 - 10 = 3x$

13. Find  $x$ :

14. Simplify without negative exponents.

$$(2x^{-2}y^3)^3$$

15. 
$$\frac{x^2 - 10x + 25}{x^2 + 5x - 50}$$

16. 
$$\frac{x^2 - 4x}{x^2 - 8x + 16} \div \frac{x^2 + 2x - 8}{x^2 - 16}$$

17. 
$$\frac{3x - 6}{x^2 + 7x} - \frac{x - 20}{x^2 + 7x}$$

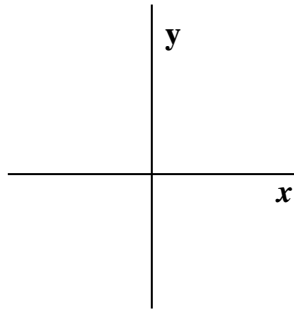
18. 
$$\frac{x}{x^2 - 7x + 10} - \frac{5}{x^2 - 25}$$

19. Solve: 
$$\frac{x+3}{3} - \frac{x-2}{2} = 3$$

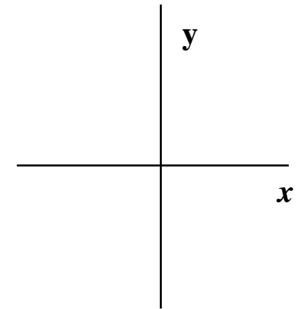
20. Solve: 
$$\frac{x+2}{x-4} = \frac{-4}{x}$$

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21. Graph:  $y = -\frac{2}{3}x + 4$



22. Graph:  $3x - 2y = -6$



23. Find the slope, the  $x$ -intercept, and the  $y$ -intercept:  $3x - 2y = -6$

24. Find the slope between  $(5, -2)$  and  $(-3, 4)$ .

25. Solve the system:  $4x - 3y = 9$   
 $x + 2y = -6$

26. Simplify:  $\sqrt{72}$

27. Simplify:  $\sqrt[3]{72}$

28. Simplify:  $\sqrt{40x^6y^{15}}$

29. Simplify:  
 $4\sqrt{20} + 7\sqrt{45}$

30. Simplify:  
 $(3\sqrt{2} - 5\sqrt{6})^2$

31. Calculate the value:  
 $(3\sqrt{2} - 5\sqrt{6})^2$