

Name: _____
Block: _____

Practice

Algebra 2/Trig: Final test (Practice)

(Practice)

1. The test has 30 questions. Some with multiple parts.
2. Each question is worth 2 points.
3. You have 120 minutes to complete the test (more if you have accommodations).
4. You are allowed one 3x5" index card. This is your individualized card, and you will need to attach it to your final exam (you will get it back).

Common test instructions:

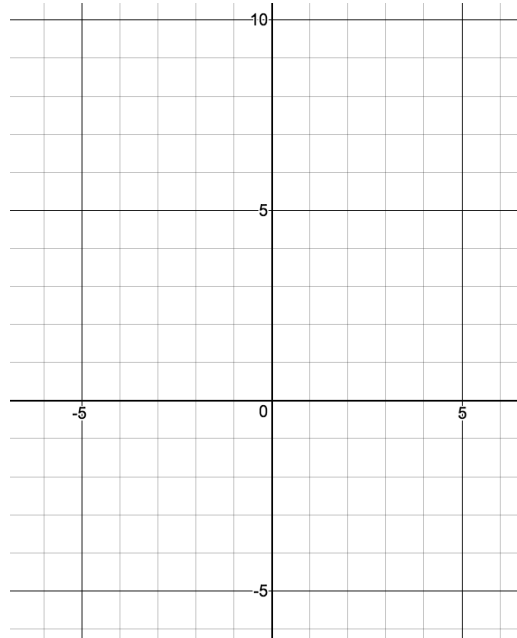
5. You should **SHOW YOUR WORK** for all parts of the answer to receive full credit.
6. Write your answers using either blue or black ink or a pencil. Please don't use red pen.
7. Clearly indicate (underline/ box/highlight) your final answer. Only **ONE** answer per question will be considered.

The use of calculator is NOT allowed.

Good luck!!
Dr. Baharav

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1. Find the equation of the line going through the point $(0,1)$ and parallel to the line $y = 3 - x$.
Plot the two lines below.



2. Solve.

$$\begin{cases} 5x + 3y = 7 \\ 3x - 2y = 8 \end{cases}$$

3. Solve.

$$\begin{cases} x + 2y = 11 \\ 2x - y = 2 \end{cases}$$

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4. Simplify:

$$(3x - 2) \cdot (3 - 2x) - (2x^2 - 4)$$

5. Simplify:

$$(3 - 2x) \cdot (2x^3 + 2x^2 + 1) - (5x^3 - 1)$$

6. Factor completely:

$$16 - 9x^2$$

7. Factor completely:

$$x^2 - 4x - 12$$

8. Factor completely:

$$3x^2 + 10x - 8$$

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9. Simplify:

$$\frac{3x + 3y}{(x^2 - y^2)}$$

10. Divide:

$$(x^5 - 6x^3 + 7x^2 - 5x - 2) \div (x - 2)$$

11. Divide:

$$(4x^3 + 2x^2 - 10x - 3) \div (2x - 3)$$

12. Simplify:

$$\sqrt{49 \cdot x^2 y^8 z^5 w}$$

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13. Simplify:

$$5\sqrt{3} - 3\sqrt{12}$$

14. Simplify (write as complex number if necessary):

$$\sqrt{-9} \cdot \sqrt{-4}$$

15. Simplify (write as complex number if necessary):

$$(3 - \sqrt{-4}) \cdot \sqrt{-16}$$

16. Solve (Remember to show your work!):

$$2x^2 + 8x = 0$$

17. Solve (Remember to show your work!):

$$2x^2 - 8 = 0$$

18. Solve (Remember to show your work!):

$$2x^2 + 8 = 0$$

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19. Solve (Remember to show your work!):

$$2x^2 + 3x - 9 = 0$$

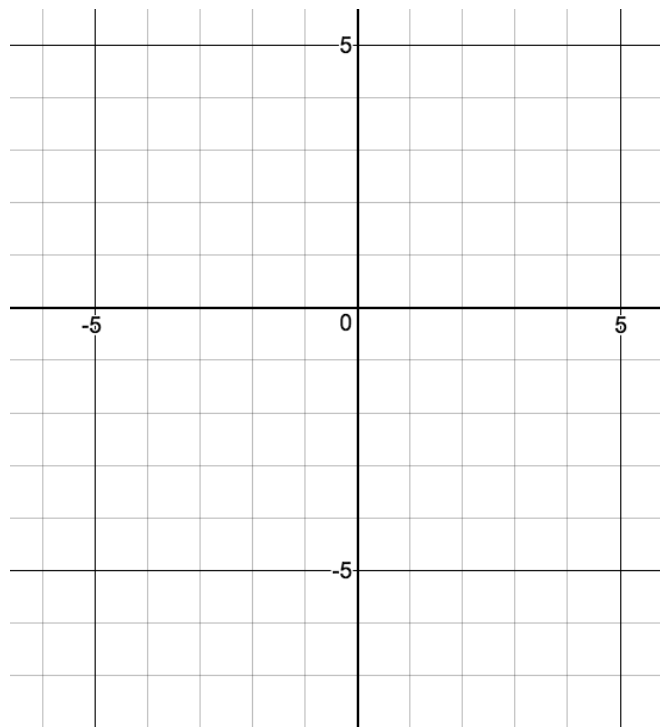
The next 4 questions refer to the following function:

$$y = -(x - 1)^2 + 2$$

20. Fill-in the table of values for the function.

x	y
-2	
-1	
0	
1	
2	
3	

21. Graph the function. Label the vertex, and indicate the x-intercepts and y-intercepts if any.



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22. Calculate (algebraically) the y-intercept(s).

23. Calculate (algebraically) the x-intercept(s).

24. Solve for x.

a. $x = \log_3 27$

b. $3 = \log_2 x$

c. $2^{x+2} = 16$

25. Calculate the following.

a. $\log_8(2)$

b. $\log_2\left(\frac{1}{4}\right)$

c. $\log(1000)$

26. Simplify (Rationalize the denominator):

$$\frac{3 - \sqrt{12}}{\sqrt{3}}$$

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27. Simplify and give restricted values:

$$\frac{x}{x-4} - \frac{(x-1)}{x+3}$$

a. Restricted values:

b. simplify:

28. Solve and check:

$$\frac{9}{x^2 - 25} + \frac{3}{x + 5} = 0$$

a. Solve:

b. Check:

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29. Solve and check:

$$\sqrt{3x + 10} = 2 \cdot x$$

c. Solve:

d. Check:

30. Simplify and give restricted values:

$$\frac{9x^2 - 16}{(3x + 4)} \div \frac{3x - 4}{9x + 4}$$

a. Restricted values:

b. simplify:

=== End of test