

CHAPTER 9/TOPIC 5 POSTTEST

First and Last Name _____

Teacher _____ **Block** _____

This test will help us learn how you think about algebra topics from Chapter 9/Topic 5. Please do your best to circle an answer for all the questions.

If you don't know an answer, you may guess or write "I don't know". Please don't leave any questions blank – we want to know how much you had time to try.

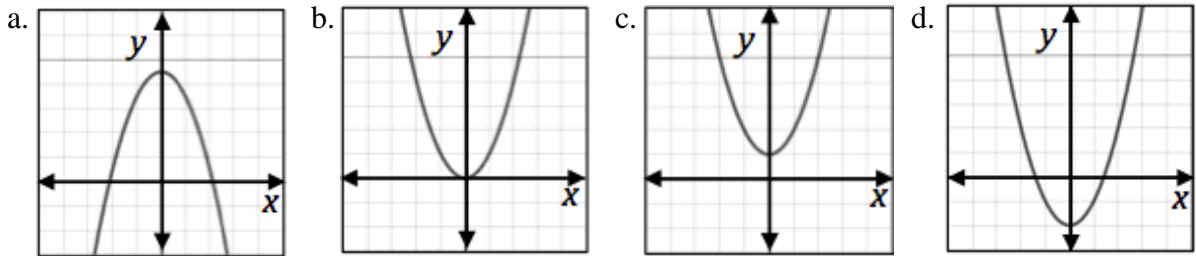
If you make a mistake, please lightly cross out the work, but do not erase it.

Only work forwards in the test booklet. Do not go back to a page that you've already looked at, even if you have extra time.

Thank you for doing your best work!

This page is blank on purpose!

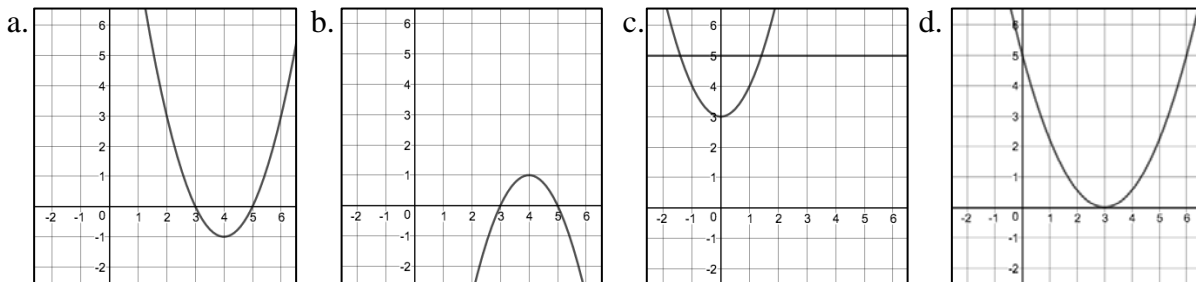
1) Which of the following graphs could represent a quadratic function with no real solutions?



2) When is $\sqrt{x^2}$ equal to x ?

- a. Always
- b. For all values of x
- c. Only when x is 0
- d. Only when x is a positive number
- e. Never

3) Which of the following graphs shows a quadratic equation with solutions at $x = 3$ and $x = 5$?



- e. Both a and b
- f. Both a and d

4) Which of the following is NOT equivalent to $\sqrt{6} \cdot \sqrt{8}$?

- a. $\sqrt{48}$
- b. $\sqrt{24}$
- c. $\sqrt{8} \cdot \sqrt{6}$
- d. $2\sqrt{12}$
- e. $2\sqrt{2} \cdot \sqrt{6}$

5) Which of the following quadratic expressions CANNOT be written as a perfect square trinomial?

- a. $x^2 + 6x + 9$
- b. $x^2 + 10x + 27 - 2$
- c. $x^2 + 2x + 1 + 9$
- d. $2x^2 + 6x + 5 - (x^2 + 2x + 1)$
- e. All of the above expressions can be written as a perfect square trinomial.

6) Simplify the expressions below.

<p>a.</p> $\sqrt{\frac{15}{20}}$ <p>Answer: _____</p>	<p>b.</p> $\frac{\sqrt{3}+6\sqrt{3}}{\sqrt{3}}$ <p>Answer: _____</p>
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7) Solve the equation $(4x + 4)^2 = 64$.

Answer: _____

8) Solve the equation $9(x + 3)^2 = 81$.

Answer: _____

9) Solve the quadratic equation $x^2 + 8x = 0$.

Answer: _____

For questions 10-11, **imagine you are taking a timed test.** You want to use fast (and correct) ways to solve the problems so you can finish as many as possible. Choose the best way to start each problem.

10) On a timed test, which would be the BEST way to begin to simplify the expression below?
(Circle the letter for the best way).

$$\frac{2\sqrt{10} + 3\sqrt{10}}{\sqrt{5}}$$

<p>a. Gabriella's way:</p> $\frac{2\sqrt{10}+3\sqrt{10}}{\sqrt{5}} \left(\frac{\sqrt{5}}{\sqrt{5}} \right)$ <p>...</p>	<p>b. Jamal's way:</p> $\frac{2\sqrt{10}+3\sqrt{10}}{\sqrt{5}} \left(\frac{\sqrt{10}}{\sqrt{10}} \right)$ <p>...</p>	<p>c. Nadia's way:</p> $\frac{\sqrt{10}(2+3)}{\sqrt{5}}$ <p>...</p>
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11) On a timed test, which would be the BEST way to start solving the equation below?
(Circle the letter for the best way).

$$(7x + 5)^2 = 64$$

<p>a. Gabriella's way:</p> $(7x)^2 + 2(7x)(5) + 5^2 = 64$ <p>...</p>	<p>b. Jamal's way:</p> $\sqrt{(7x + 5)^2} = \sqrt{64}$ <p>...</p>	<p>c. Nadia's way:</p> $(7x + 5)(7x + 5) = 64$ <p>...</p>
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12) Below is the beginning of Gabriella's work in simplifying $\sqrt{\frac{27}{6}}$

$$\frac{\sqrt{27}}{\sqrt{6}} \left(\frac{\sqrt{6}}{\sqrt{6}} \right)$$

Simplify this expression using a way that is **different** from Gabriella's:

For number 12, please use the space provided on your answer sheet to show all your work and write your answer.

13) Below is the beginning of Jamal's work in solving $(x - 2)(x - 2) = 16$.

$$(x - 2)(x - 2) = 16$$

$$x^2 - 4x + 4 = 16$$

...

Solve this quadratic equation using a **different** way that is **easier** and **faster** than Jamal's way.

$$(x - 2)(x - 2) = 16$$

For number 13, please use the space provided on your answer sheet to show all your work and write your answer.