

Are you ready for Algebra I?

Practice important concepts for this subject with these advanced problems. Use Photomath to check your answers or to help you work through steps when you're stuck. In some cases, you will need to apply multiple math concepts to determine the best or most appropriate solution format. Full solutions are at the end for your reference.

Happy Math Learning!

Question 1. What is the prime factorization of this expression?

$$(abc)(acd)(bc)$$

Question 2. What is the y-intercept of the graph of the equation:

$$4x - y = 2$$

- A. $\frac{1}{2}$ B. -3 C. -2 D. $\frac{2}{3}$

Question 3. What is the product of the following expression?

$$(-2x^3)(5x^{-4})$$

- A. $-10x^{12}$ B. $-10x^{-1}$ C. $3x^7$ D. $-10x^7$

Question 4. If $x - 3$ is a factor of $x^2 + x - 12$, then the other factor is?

Question 5. On the set of axes below, draw the graph of the equation:

$$y = -\frac{3}{4}x + 3$$

Question 6. On the set of axes below, draw the graph of the equation:

$$y = \sqrt{x} - 1$$

Question 7. What are the roots of this equation?

$$x^2 + 4x - 16 = 0$$

- A. $-2 \pm 4\sqrt{5}$ B. $2 \pm 4\sqrt{5}$ C. $-2 \pm 2\sqrt{5}$ D. $2 \pm 2\sqrt{5}$

Question 8. What are all values of x for which the following inequality is true?

$$5x + \frac{5}{3} \leq -2x - \frac{2}{3}$$

- A. $x \leq -\frac{7}{9}$ B. $x \leq -13$ C. $x > 0$ D. A, B, and C

Question 9. Solve the equation using both the factoring method and the quadratic formula.

$$x^2 + 8x + 16 = 0$$

Solutions

Question 1: $a^2b^2c^3d$

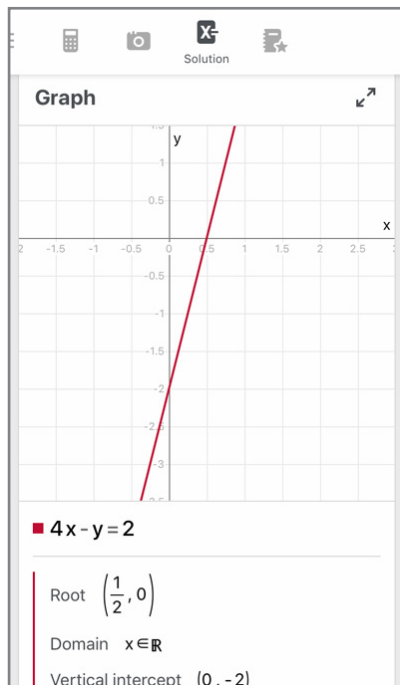
Question 2: C

Solving with Photomath

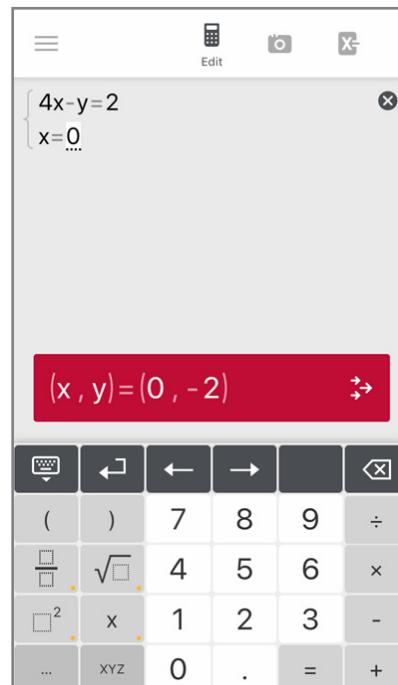
Option 1: Photomath provides graphs at the bottom. Y-intercept or vertical intercept is the value of y when $x = 0$

Option 2: Solve this with a system of equations with the second equation as $x = 0$

Option 1



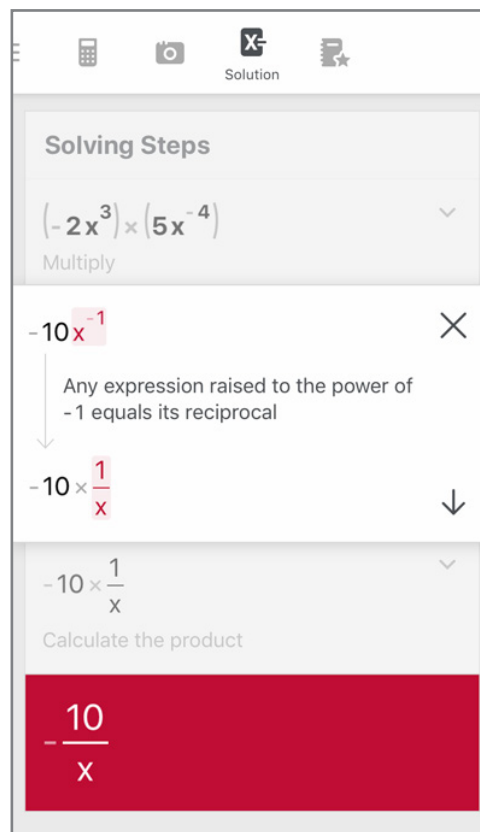
Option 2



Question 3: B

Solving with Photomath

- The key is to recognize that an expression raised to the power of -1 equals its reciprocal
- Photomath solves the equation in the reciprocal form showing an answer of $-\frac{10}{x}$. When you tap the solution you will see individual solving steps. In the second step, we apply exponent rules to show the reciprocal form



Question 4: $(x + 4)$

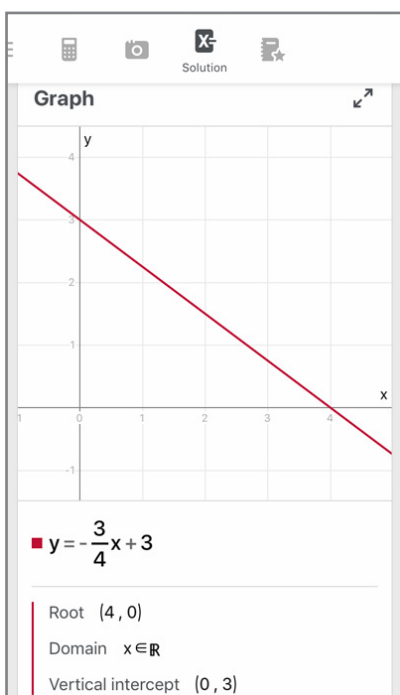
Question 5:

Solving with Photomath

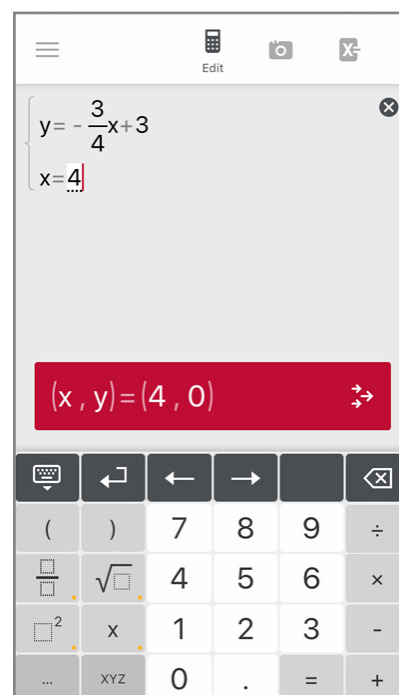
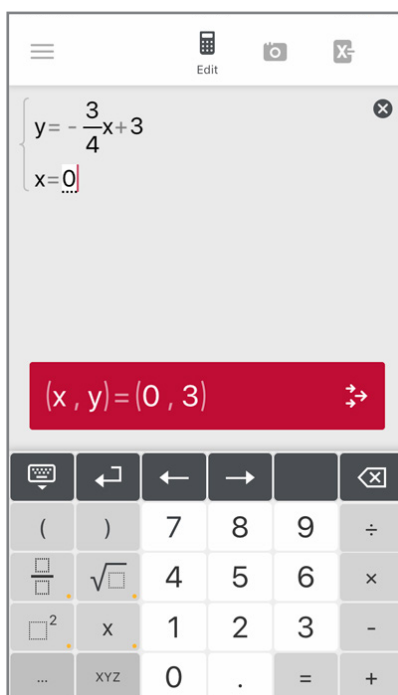
Option 1: Scan problem with Photomath, review the graph and compare your solution

Option 2: Enter x-values into the equation using Photomath's calculator to find the corresponding y-values. Plot the points on the graph

Option 1



Option 2



Question 6:

Solving with Photomath

Option 1: Scan problem with Photomath, review the graph and compare your solution

Option 2: Enter x-values into the equation using Photomath's calculator to find the corresponding y-values. Plot the points on the graph

Question 7: C

Question 8: A

Question 9: $x = -4$

Solving with Photomath

- Click *Show other methods* to see solution steps using the factor method, quadratic formula, or PQ formula

