

Released Test Questions

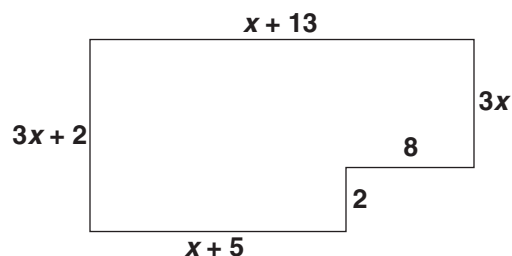
Algebra I

- 51** A volleyball court is shaped like a rectangle. It has a width of x meters and a length of $2x$ meters. Which expression gives the area of the court in square meters?

A $3x$
 B $2x^2$
 C $3x^2$
 D $2x^3$

CSA00496

- 52** What is the perimeter of the figure shown below, which is not drawn to scale?



A $5x + 33$
 B $5x^3 + 33$
 C $8x + 30$
 D $8x^4 + 30$

CSA10016

- 53** Which is the factored form of $3a^2 - 24ab + 48b^2$?

A $(3a - 8b)(a - 6b)$
 B $(3a - 16b)(a - 3b)$
 C $3(a - 4b)(a - 4b)$
 D $3(a - 8b)(a - 8b)$

CSA00066

- 54** Which is a factor of $x^2 - 11x + 24$?

A $x + 3$
 B $x - 3$
 C $x + 4$
 D $x - 4$

CSA00503

- 55** Which of the following shows $9t^2 + 12t + 4$ factored completely?

A $(3t + 2)^2$
 B $(3t + 4)(3t + 1)$
 C $(9t + 4)(t + 1)$
 D $9t^2 + 12t + 4$

CSA20106

- 56** What is the complete factorization of $32 - 8z^2$?

A $-8(2 + z)(2 - z)$
 B $8(2 + z)(2 - z)$
 C $-8(2 + z)^2$
 D $8(2 - z)^2$

CSA20105

Algebra I**Released Test Questions**

- 57** If x^2 is added to x , the sum is 42. Which of the following could be the value of x ?

A -7
B -6
C 14
D 42

CSA10171

- 58** What quantity should be added to both sides of this equation to complete the square?

$$x^2 - 8x = 5$$

A 4
B -4
C 16
D -16

CSA00478

- 59** What are the solutions for the quadratic equation $x^2 + 6x = 16$?

A -2, -8
B -2, 8
C 2, -8
D 2, 8

CSA10062

- 60** Leanne correctly solved the equation $x^2 + 4x = 6$ by completing the square. Which equation is part of her solution?

A $(x+2)^2 = 8$
B $(x+2)^2 = 10$
C $(x+4)^2 = 10$
D $(x+4)^2 = 22$

CSA20139

- 61** Carter is solving this equation by factoring.

$$10x^2 - 25x + 15 = 0$$

Which expression could be one of his correct factors?

A $x + 3$
B $x - 3$
C $2x + 3$
D $2x - 3$

CSA00162

- 62** What are the solutions for the quadratic equation $x^2 - 8x = 9$?

A 3
B 3, -3
C 1, -9
D -1, 9

CSA10063

Released Test Questions

Algebra I

- 63** Toni is solving this equation by completing the square.

$$ax^2 + bx + c = 0 \text{ (where } a \geq 0\text{)}$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{b}{a}x = -\frac{c}{a}$

Step 3: ?

Which should be Step 3 in the solution?

A $x^2 = -\frac{c}{b} - \frac{b}{a}x$

B $x + \frac{b}{a} = -\frac{c}{ax}$

C $x^2 + \frac{b}{a}x + \frac{b}{2a} = -\frac{c}{a} + \frac{b}{2a}$

D $x^2 + \frac{b}{a}x + \left(\frac{b}{2a}\right)^2 = -\frac{c}{a} + \left(\frac{b}{2a}\right)^2$

CSA00072

- 64** Four steps to derive the quadratic formula are shown below.

I $x^2 + \frac{bx}{a} = \frac{-c}{a}$

II $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

III $x = \pm \sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b}{2a}$

IV $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

What is the correct order for these steps?

A I, IV, II, III

B I, III, IV, II

C II, IV, I, III

D II, III, I, IV

CSA20062

- 65** Which is one of the solutions to the equation $2x^2 - x - 4 = 0$?

A $\frac{1}{4} - \sqrt{33}$

B $-\frac{1}{4} + \sqrt{33}$

C $\frac{1 + \sqrt{33}}{4}$

D $\frac{-1 - \sqrt{33}}{4}$

CSA00314

Algebra I

Released Test Questions

- 66** Which statement *best* explains why there is no real solution to the quadratic equation $2x^2 + x + 7 = 0$?

- A The value of $1^2 - 4 \cdot 2 \cdot 7$ is positive.
 B The value of $1^2 - 4 \cdot 2 \cdot 7$ is equal to 0.
 C The value of $1^2 - 4 \cdot 2 \cdot 7$ is negative.
 D The value of $1^2 - 4 \cdot 2 \cdot 7$ is not a perfect square.

CSA10147

- 67** What is the solution set of the quadratic equation $8x^2 + 2x + 1 = 0$?

- A $\left\{-\frac{1}{2}, \frac{1}{4}\right\}$
 B $\{-1 + \sqrt{2}, -1 - \sqrt{2}\}$
 C $\left\{\frac{-1 + \sqrt{7}}{8}, \frac{-1 - \sqrt{7}}{8}\right\}$
 D no real solution

CSA10179

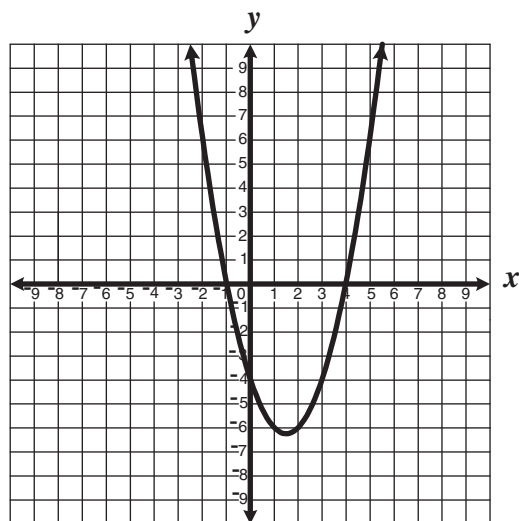
- 68** What are the solutions to the equation

$$3x^2 + 3 = 7x?$$

- A $x = \frac{7 + \sqrt{85}}{6}$ or $x = \frac{7 - \sqrt{85}}{6}$
 B $x = \frac{-7 + \sqrt{85}}{6}$ or $x = \frac{-7 - \sqrt{85}}{6}$
 C $x = \frac{7 + \sqrt{13}}{6}$ or $x = \frac{7 - \sqrt{13}}{6}$
 D $x = \frac{-7 + \sqrt{13}}{6}$ or $x = \frac{-7 - \sqrt{13}}{6}$

CSA00224

- 69** The graph of the equation $y = x^2 - 3x - 4$ is shown below.



For what value or values of x is $y = 0$?

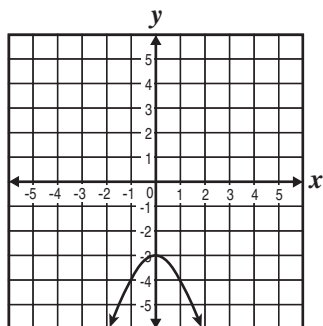
- A $x = -1$ only
 B $x = -4$ only
 C $x = -1$ and $x = 4$
 D $x = 1$ and $x = -4$

CSA00514

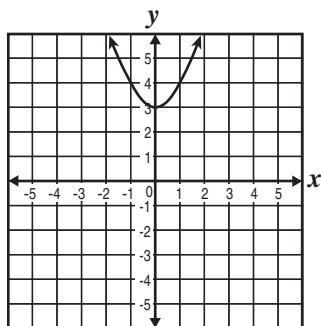
Released Test Questions

Algebra I

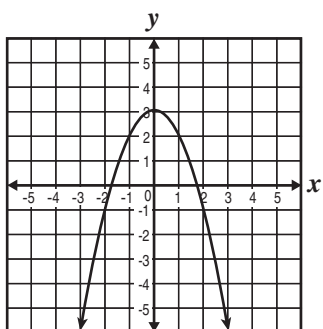
- 70** Which *best* represents the graph of $y = -x^2 + 3$?



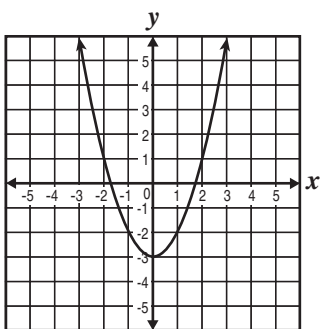
A



C



B



D

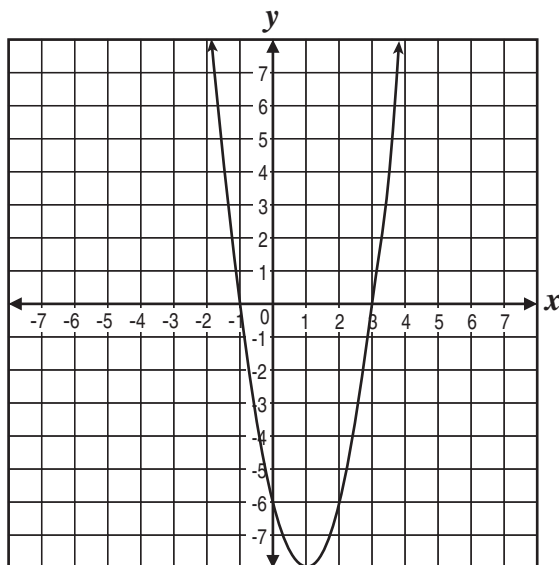
CSA00519

- 71** Which quadratic function, when graphed, has x -intercepts of 4 and -3 ?

- A $y = (x - 3)(x + 4)$
 B $y = (x + 3)(2x - 8)$
 C $y = (3x - 1)(4x + 1)$
 D $y = (3x + 1)(8x - 2)$

CSA20115

- 72** What are the real roots of the function in the graph?



- A 3
 B -6
 C -1 and 3
 D -6 , -1 , and 3

CSA20120

- 73** How many times does the graph of $y = 2x^2 - 2x + 3$ intersect the x -axis?

- A none
 B one
 C two
 D three

CSA10084

Algebra I

Released Test Questions

- 74** An object that is projected straight downward with initial velocity v feet per second travels a distance $s = vt + 16t^2$, where t = time in seconds. If Ramón is standing on a balcony 84 feet above the ground and throws a penny straight down with an initial velocity of 10 feet per second, in how many seconds will it reach the ground?

A 2 seconds
 B 3 seconds
 C 6 seconds
 D 8 seconds

CSA00158

- 75** The height of a triangle is 4 inches greater than twice its base. The area of the triangle is 168 square inches. What is the base of the triangle?

A 7 in.
 B 8 in.
 C 12 in.
 D 14 in.

CSA00104

- 76** A rectangle has a diagonal that measures 10 centimeters and a length that is 2 centimeters longer than the width. What is the width of the rectangle in centimeters?

A 5
 B 6
 C 8
 D 12

CSA10200

- 77** What is $\frac{x^2 - 4xy + 4y^2}{3xy - 6y^2}$ reduced to lowest terms?

A $\frac{x - 2y}{3}$
 B $\frac{x - 2y}{3y}$
 C $\frac{x + 2y}{3}$
 D $\frac{x + 2y}{3y}$

CSA00463

- 78** Simplify $\frac{6x^2 + 21x + 9}{4x^2 - 1}$ to lowest terms.

A $\frac{3(x+1)}{2x-1}$
 B $\frac{3(x+3)}{2x-1}$
 C $\frac{3(2x+3)}{4(x-1)}$
 D $\frac{3(x+3)}{2x+1}$

CSA10025

Released Test Questions

Algebra I

79 What is $\frac{x^2 - 4x + 4}{x^2 - 3x + 2}$ reduced to lowest terms?

A $\frac{x-2}{x-1}$

B $\frac{x-2}{x+1}$

C $\frac{x+2}{x-1}$

D $\frac{x+2}{x+1}$

CSA10189

80 What is $\frac{12a^3 - 20a^2}{16a^2 + 8a}$ reduced to lowest terms?

A $\frac{a}{2}$

B $\frac{3a-5}{2a+1}$

C $-\frac{2a}{4+2a}$

D $\frac{a(3a-5)}{2(2a+1)}$

CSA00013

81 What is the simplest form of the

fraction $\frac{x^2 - 1}{x^2 + x - 2}$?

A $\frac{-1}{x-2}$

B $\frac{x-1}{x-2}$

C $\frac{x-1}{x+2}$

D $\frac{x+1}{x+2}$

CSA20127

82 $\frac{7z^2 + 7z}{4z + 8} \cdot \frac{z^2 - 4}{z^3 + 2z^2 + z} =$

A $\frac{7(z-2)}{4(z+1)}$

B $\frac{7(z+2)}{4(z-1)}$

C $\frac{7z(z+1)}{4(z+2)}$

D $\frac{7z(z-1)}{4(z+2)}$

CSA00067

Algebra I

Released Test Questions

- 83** Which fraction equals the product

$$\left(\frac{x+5}{3x+2}\right)\left(\frac{2x-3}{x-5}\right)?$$

- A $\frac{2x-3}{3x+2}$
- B $\frac{3x+2}{4x-3}$
- C $\frac{x^2-25}{6x^2-5x-6}$
- D $\frac{2x^2+7x-15}{3x^2-13x-10}$

CSA10029

84
$$\frac{x^2+8x+16}{x+3} \div \frac{2x+8}{x^2-9} =$$

- A $\frac{2(x+4)^2}{(x-3)(x+3)^2}$
- B $\frac{2(x+3)(x-3)}{x+4}$
- C $\frac{(x+4)(x-3)}{2}$
- D $\frac{(x+4)(x-3)^2}{2(x+3)}$

CSA20164

85 Which fraction is equivalent to $\frac{\frac{3x}{5}}{\frac{x}{4} + \frac{x}{2}}?$

- A $\frac{x^2}{5}$
- B $\frac{9x^2}{20}$
- C $\frac{4}{5}$
- D $\frac{9}{5}$

CSA10141

- 86** A pharmacist mixed some 10%-saline solution with some 15%-saline solution to obtain 100 mL of a 12%-saline solution. How much of the 10%-saline solution did the pharmacist use in the mixture?

- A 60 mL
- B 45 mL
- C 40 mL
- D 25 mL

CSA00333

- 87** Andy's average driving speed for a 4-hour trip was 45 miles per hour. During the first 3 hours he drove 40 miles per hour. What was his average speed for the last hour of his trip?

- A 50 miles per hour
- B 60 miles per hour
- C 65 miles per hour
- D 70 miles per hour

CSA00576

Released Test Questions

Algebra I

- 88** One pipe can fill a tank in 20 minutes, while another takes 30 minutes to fill the same tank. How long would it take the two pipes together to fill the tank?

A 50 min
B 25 min
C 15 min
D 12 min

CSA00161

- 89** Two airplanes left the same airport traveling in opposite directions. If one airplane averages 400 miles per hour and the other airplane averages 250 miles per hour, in how many hours will the distance between the two planes be 1625 miles?

A 2.5
B 4
C 5
D 10.8

CSA10055

- 90** Lisa will make punch that is 25% fruit juice by adding pure fruit juice to a 2-liter mixture that is 10% pure fruit juice. How many liters of pure fruit juice does she need to add?

A 0.4 liter
B 0.5 liter
C 2 liters
D 8 liters

CSA10186

91

Jena's Vacation

Miles Traveled	600	450	300	960
Gallons of Gasoline	20	15	10	x

Jena's car averaged 30 miles per gallon of gasoline on her trip. What is the value of x in gallons of gasoline?

A 32
B 41
C 55
D 80

CSA10064

- 92** Which relation is a function?

A $\{(-1, 3), (-2, 6), (0, 0), (-2, -2)\}$
B $\{(-2, -2), (0, 0), (1, 1), (2, 2)\}$
C $\{(4, 0), (4, 1), (4, 2), (4, 3)\}$
D $\{(7, 4), (8, 8), (10, 8), (10, 10)\}$

CSA10070

Algebra I

Released Test Questions

93 Which relation is a function?

A

Input	Output
1	2
2	2
3	3
4	3

B

Input	Output
2	6
2	5
6	4
6	3

C

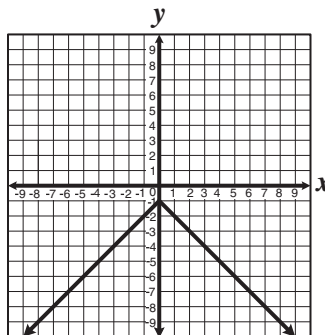
Input	Output
1	2
2	4
4	6
4	8

D

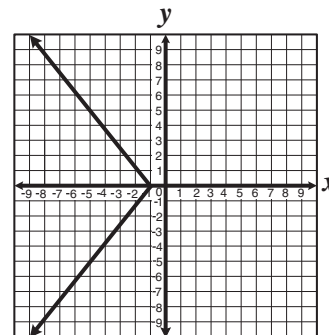
Input	Output
0	1
0	2
1	3
1	4

CSA10071

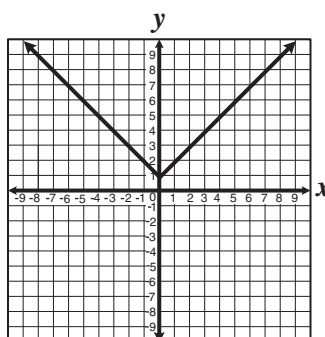
94 For which equation graphed below are *all* the *y*-values negative?



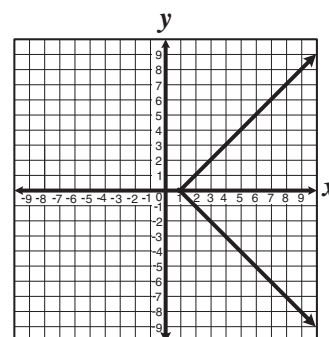
A



C



B



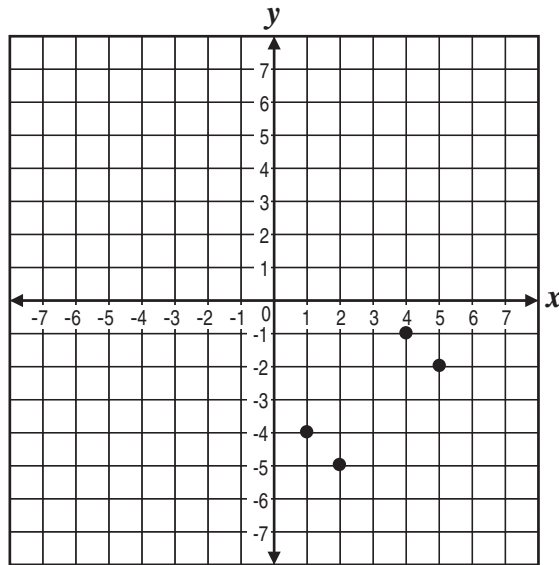
D

CSA00522

Released Test Questions

Algebra I

- 95 What is the domain of the function shown on the graph below?



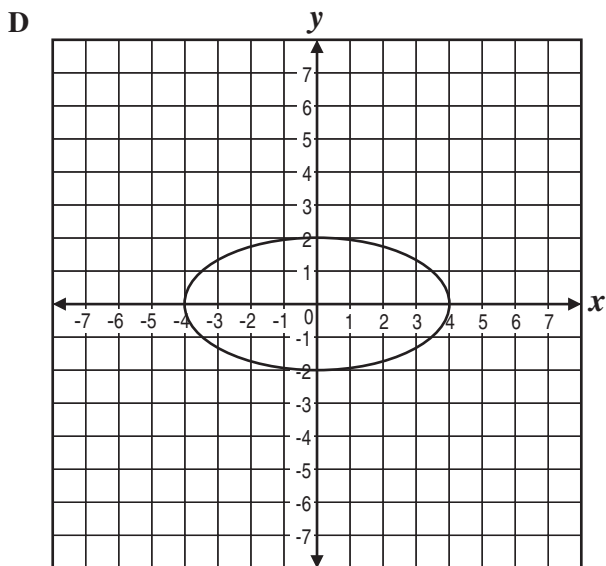
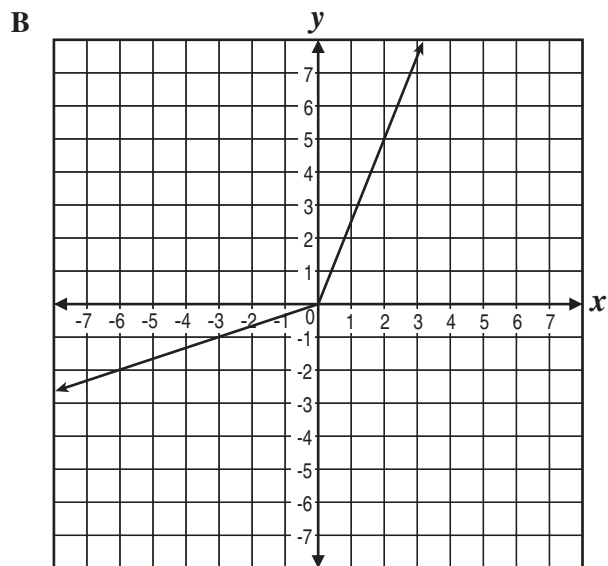
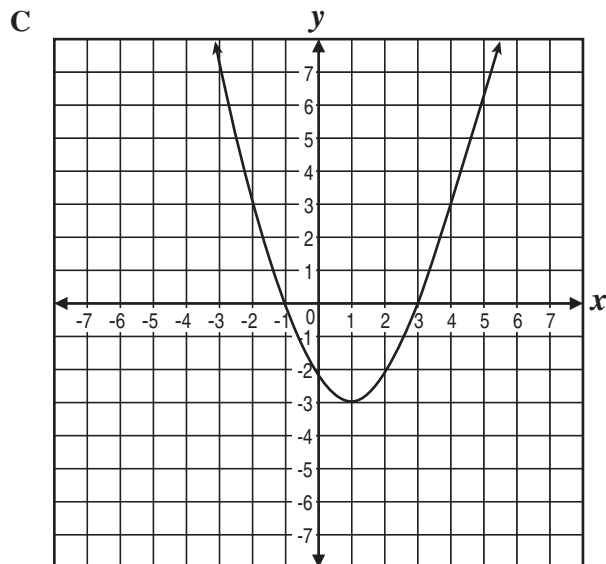
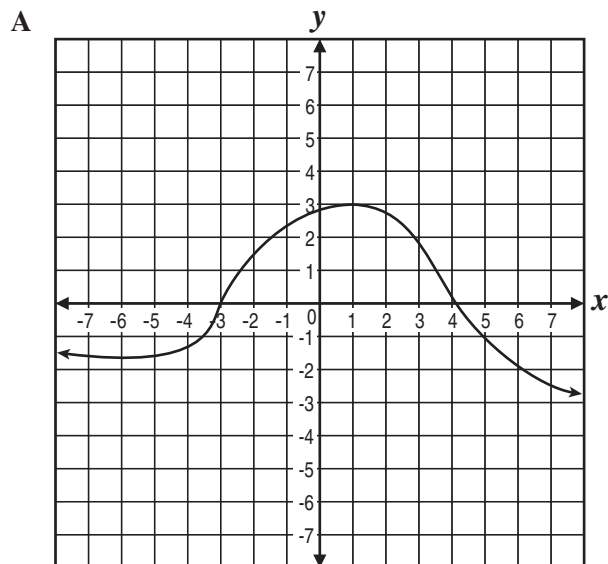
- A $\{-1, -2, -3, -4\}$
B $\{-1, -2, -4, -5\}$
C $\{1, 2, 3, 4\}$
D $\{1, 2, 4, 5\}$

CSA10072

Algebra I

Released Test Questions

- 96 Which of the following graphs represents a relation that is *not* a function of x ?



CSA30002