SAT Math

Nonlinear Equations and Systems 1

Question #	ID

1.1 3c95093c

$6x - 9y > 12$

Which of the following inequalities is equivalent to the inequality above?

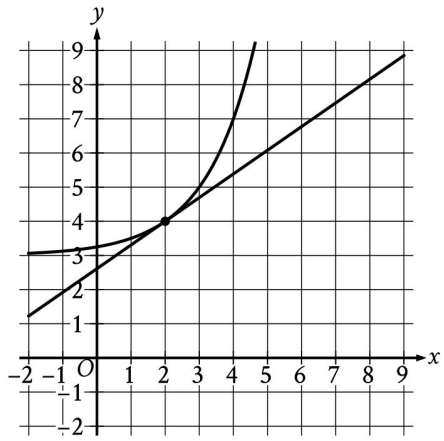
A. $x - y > 2$

B. $2x - 3y > 4$

C. $3x - 2y > 4$

D. $3y - 2x > 2$

1.2 4ca30186



The graph of a system of a linear equation and a nonlinear equation is shown. What is the solution (x, y) to this system?

A. $(0, 0)$

B. $(0, 2)$

C. $(2, 4)$

D. $(4, 0)$

1.3 3de7a7d7

Which of the following is a solution to the equation $2x^2 - 4 = x^2$?

A. 1

B. 2

C. 3

D. 4

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Question #	ID

1.4 70f98ab4

$$q - 29r = s$$

The given equation relates the positive numbers q, r, and s. Which equation correctly expresses q in terms of r and s?

A. $q = s - 29r$

B. $q = s + 29r$

C. $q = 29rs$

D. $q = -\frac{s}{29r}$

1.5 568aaf27

$$x + y = 12$$
$$y = x^2$$

If (x, y) is a solution to the system of equations above, which of the following is a possible value of x?

A. 0

B. 1

C. 2

D. 3

1.6 b76a2815

$$P = \frac{W}{t}$$

The power P produced by a machine is represented by the equation above, where W is the work performed during an amount of time t. Which of the following correctly expresses W in terms of P and t ?

A. $W = Pt$

B. $W = \frac{P}{t}$

C. $W = \frac{t}{P}$

D. $W = P + t$

1.7 c7789423

$$|x - 2| = 9$$

What is one possible solution to the given equation?

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Question #	ID

1.8 eb268057

$x^2 = 64$

Which of the following values of x satisfies the given equation?

A. -8

B. 4

C. 32

D. 128

1.9 98f735f2

The total revenue from sales of a product can be calculated using the formula $T = PQ$, where T is the total revenue, P is the price of the product, and Q is the quantity of the product sold. Which of the following equations gives the quantity of product sold in terms of P and T?

A. $Q = \frac{P}{T}$

B. $Q = \frac{T}{P}$

C. $Q = PT$

D. $Q = T - P$

1.10 fcb78856

$$b = 42cf$$

The given equation relates the positive numbers b, c, and f. Which equation correctly expresses c in terms of b and f?

A. $c = \frac{b}{42f}$

B. $c = \frac{b-42}{f}$

C. $c = 42bf$

D. $c = 42 - b - f$

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Question #	ID

1.11 4236c5a3

If $(x+5)^2 = 4$, which of the following is a possible value of x ?

A. 1

B. -1

C. -2

D. -3

1.12 f11ffa93

$\sqrt{x+4} = 11$

What value of x satisfies the equation above?

1.13 5639dd1a

$x^2 = (22)(22)$ What is the positive solution to the given equation?

1.14 c1964c11

$p + 34 = q + r$

The given equation relates the variables p, q, and r. Which equation correctly expresses p in terms of q and r?

A. $p = q + r + 34$

B. $p = q + r - 34$

C. $p = -q - r + 34$

D. $p = -q - r - 34$

1.15 7cb3a8ee

$$|x - 5| = 10$$

What is one possible solution to the given equation?

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Question #	ID

1.16 b8c4a1cd

$$8j = k + 15m$$

The given equation relates the distinct positive numbers j, k, and m. Which equation correctly expresses j in terms of k and m?

A. $j = \frac{k}{8} + 15m$

B. $j = k + \frac{15m}{8}$

C. $j = 8(k + 15m)$

D. $j = \frac{k+15m}{8}$

1.17 7a8cb72a

$$7m = 2(n + p)$$

The given equation relates the positive numbers m, n, and p. Which equation correctly gives m in terms of n and p?

A. $m = \frac{2(n+p)}{7}$

B. $m = 2(n + p)$

C. $m = 2(n + p) - 7$

D. $m = 2 - n - p - 7$

SAT Math

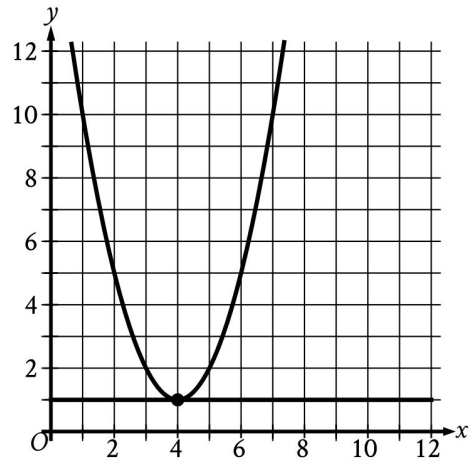
Nonlinear Equations and Systems 1

Question #	ID
1.18	d0e8e8f5

Question ID d0e8e8f5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	■□□

ID: d0e8e8f5



The graph of a system of a linear and a quadratic equation is shown. What is the solution (x, y) to this system?

A. $(0, 0)$

B. $(-4, 1)$

C. $(4, -1)$

D. $(4, 1)$

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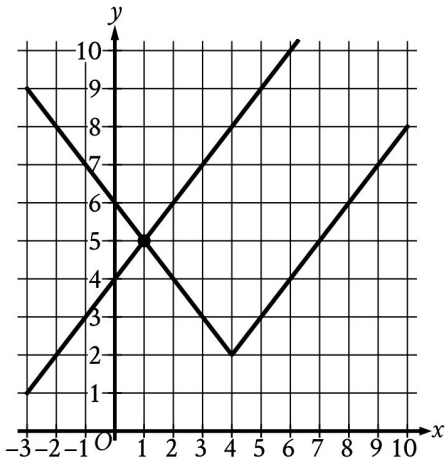
Question # **ID**

1.19 d3f7c429



The graph of a system of an absolute value function and a linear function is shown. What is the solution (x, y) to this system of two equations?

A. $(-1, 5)$

B. $(0, 4)$

C. $(1, 5)$

D. $(4, 2)$

1.20 13e5a5d5

$$5|x| = 45$$

What is the positive solution to the given equation?

1.21 58443765

$$y = 5x + 4$$
$$y = 5x^2 + 4$$

Which ordered pair (x, y) is a solution to the given system of equations?

A. $(0, 0)$

B. $(0, 4)$

C. $(8, 44)$

D. $(8, 84)$

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Question #	ID
1.22	332cd67b

$$3x^2 - 15x + 18 = 0$$

How many distinct real solutions are there to the given equation?

A. Exactly one

B. Exactly two

C. Infinitely many

D. Zero