

Question ID 498850a9

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: 498850a9

$$y = 76$$
$$y = x^2 - 5$$

The graphs of the given equations in the xy -plane intersect at the point (x, y) . What is a possible value of x ?

- A. $-\frac{76}{5}$
- B. -9
- C. 5
- D. 76

Question ID 7fa6752e

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: 7fa6752e

$$v = -\frac{w}{150x}$$

The given equation relates the distinct positive numbers v , w , and x . Which equation correctly expresses w in terms of v and x ?

- A. $w = -150vx$
- B. $w = -\frac{150v}{x}$
- C. $w = -\frac{x}{150v}$
- D. $w = v + 150x$

Question ID 17690f09

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: 17690f09

If $|4x - 4| = 112$, what is the positive value of $x - 1$?

Question ID 242d1f14

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: 242d1f14

$$p + 34 = q + r$$

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. $p = -q - r - 34$

Question ID dd63d964

Assessment	Test	Domain	Skill	Difficulty
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ID: dd63d964

$$c - 7 = 25p + k$$

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

- A. $c = 25p + k + 7$
- B. $c = 25p + k - 7$
- C. $c = 7(25p + k)$
- D. $c = \frac{25p+k}{7}$

Question ID 41227fe9

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: 41227fe9

$$y = x^2 + 14x + 48$$
$$x + 8 = 11$$

The solution to the given system of equations is (x, y) . What is the value of y ?

Question ID d2203268

Assessment	Test	Domain	Skill	Difficulty
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ID: d2203268

$$(x + 2)(x - 5)(x + 9) = 0$$

What is a positive solution to the given equation?

- A. 3
- B. 4
- C. 5
- D. 18

Question ID b500ed25

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: b500ed25

$-4x^2 - 7x = -36$

What is the positive solution to the given equation?

- A. $\frac{7}{4}$
- B. $\frac{9}{4}$
- C. 4
- D. 7

Question ID 1d24b236

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	

ID: 1d24b236

$$y = (x - 2)(x + 4)$$
$$y = 6x - 12$$

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

- A. $(0, 2)$
- B. $(-4, 2)$
- C. $(2, 0)$
- D. $(2, -4)$

Question ID cb62af75

Assessment	Test	Domain	Skill	Difficulty
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ID: cb62af75

$$6r = 7s + t$$

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

- A. $s = 42r - t$
- B. $s = 7(6r - t)$
- C. $s = \frac{6}{7}r - t$
- D. $s = \frac{6r-t}{7}$

Question ID 78bcfae7

Assessment	Test	Domain	Skill	Difficulty
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ID: 78bcfae7

$$14j + 5k = m$$

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

- A. $k = \frac{m-14j}{5}$
- B. $k = \frac{1}{5}m - 14j$
- C. $k = \frac{14j-m}{5}$
- D. $k = 5m - 14j$

Question ID 91b6a09f

Assessment	Test	Domain	Skill	Difficulty
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ID: 91b6a09f

$x^2 = (22)(22)$

What is the positive solution to the given equation?

Question ID 244c26d8

Assessment	Test	Domain	Skill	Difficulty
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ID: 244c26d8

$$\begin{aligned}x + 7 &= 10 \\ (x + 7)^2 &= y\end{aligned}$$

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

- A. $(3, 100)$
- B. $(3, 3)$
- C. $(3, 10)$
- D. $(3, 70)$

Question ID eeebee8d

Assessment	Test	Domain	Skill	Difficulty
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ID: eeebee8d

$$b = 42cf$$

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. $c = 42 - b - f$

Question ID 6f761b44

Assessment	Test	Domain	Skill	Difficulty
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ID: 6f761b44

$$\frac{1}{7b} = \frac{11x}{y}$$

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

- A. $x = \frac{7by}{11}$
- B. $x = y - 77b$
- C. $x = \frac{y}{77b}$
- D. $x = 77by$

Question ID e2a01f52

Assessment	Test	Domain	Skill	Difficulty
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ID: e2a01f52

$$5x^2 - 37x - 24 = 0$$

What is the positive solution to the given equation?

- A. $\frac{3}{5}$
- B. 3
- C. 8
- D. 37

Question ID 5e905ec0

Assessment	Test	Domain	Skill	Difficulty
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ID: 5e905ec0

$x^2 - 12x + 27 = 0$

How many distinct real solutions does the given equation have?

- A. Exactly two
- B. Exactly one
- C. Zero
- D. Infinitely many

Question ID d91f65a7

Assessment	Test	Domain	Skill	Difficulty
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ID: d91f65a7

$$7m = 5(n + p)$$

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

- A. $n = \frac{5p}{7m}$
- B. $n = \frac{7m}{5} - p$
- C. $n = 5(7m) + p$
- D. $n = 7m - 5 - p$

Question ID dfb44d1d

Assessment	Test	Domain	Skill	Difficulty
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ID: dfb44d1d

$$q - 29r = s$$

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

Question ID 1d367f3e

Assessment	Test	Domain	Skill	Difficulty
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ID: 1d367f3e

$$\frac{55}{x+6} = x$$

What is the positive solution to the given equation?

Question ID ce925185

Assessment	Test	Domain	Skill	Difficulty
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ID: ce925185

$$\begin{aligned}y &= 4x \\ y &= x^2 - 12\end{aligned}$$

A solution to the given system of equations is (x, y) , where $x > 0$. What is the value of x ?

Question ID 35fed7ec

Assessment	Test	Domain	Skill	Difficulty
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ID: 35fed7ec

$x^2 = -841$

How many distinct real solutions does the given equation have?

- A. Exactly one
- B. Exactly two
- C. Infinitely many
- D. Zero

Question ID 7a7ed411

Assessment	Test	Domain	Skill	Difficulty
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ID: 7a7ed411

$\frac{-54}{w} = 6$

What is the solution to the given equation?

Question ID 7a65a4aa

Assessment	Test	Domain	Skill	Difficulty
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ID: 7a65a4aa

$$\begin{aligned}x &= 8 \\ y &= x^2 + 8\end{aligned}$$

The graphs of the equations in the given system of equations intersect at the point (x, y) in the xy -plane. What is the value of y ?

- A. 8
- B. 24
- C. 64
- D. 72

Question ID 9f0e721d

Assessment	Test	Domain	Skill	Difficulty
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ID: 9f0e721d

$$8j = k + 15m$$

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

Question ID fb5f1cf7

Assessment	Test	Domain	Skill	Difficulty
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ID: fb5f1cf7

If $4\sqrt{2x} = 16$, what is the value of $6x$?

- A. 24
- B. 48
- C. 72
- D. 96

Question ID 2fc078ac

Assessment	Test	Domain	Skill	Difficulty
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ID: 2fc078ac

$$z^2 + 10z - 24 = 0$$

What is one of the solutions to the given equation?

Question ID ec297cd8

Assessment	Test	Domain	Skill	Difficulty
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ID: ec297cd8

$$\begin{aligned}x &= 3 \\ y &= (15 - x)^2\end{aligned}$$

A solution to the given system of equations is (x, y) . What is the value of xy ?

- A. 432
- B. 54
- C. 45
- D. 18