

Question ID 00a21c1d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	Medium

ID: 00a21c1d

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

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 109ed6af

Assessment	Test	Domain	Skill	Difficulty
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ID: 109ed6af

$$b = 42cf$$

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 517ac77b

Assessment	Test	Domain	Skill	Difficulty
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ID: 517ac77b

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

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

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

Question ID 43eb3ad8

Assessment	Test	Domain	Skill	Difficulty
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ID: 43eb3ad8

$5|x| = 45$

What is the positive solution to the given equation?

Question ID 500ad346

Assessment	Test	Domain	Skill	Difficulty
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ID: 500ad346

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

What is a positive solution to the given equation?

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

Question ID 572758f9

Assessment	Test	Domain	Skill	Difficulty
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ID: 572758f9

$$\begin{aligned}y &= 76 \\ y &= x^2 - 5\end{aligned}$$

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 88a7b360

Assessment	Test	Domain	Skill	Difficulty
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ID: 88a7b360

$$8j = k + 15m$$

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 098b6267

Assessment	Test	Domain	Skill	Difficulty
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ID: 098b6267

$$p + 34 = q + r$$

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 605ec72a

Assessment	Test	Domain	Skill	Difficulty
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ID: 605ec72a

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

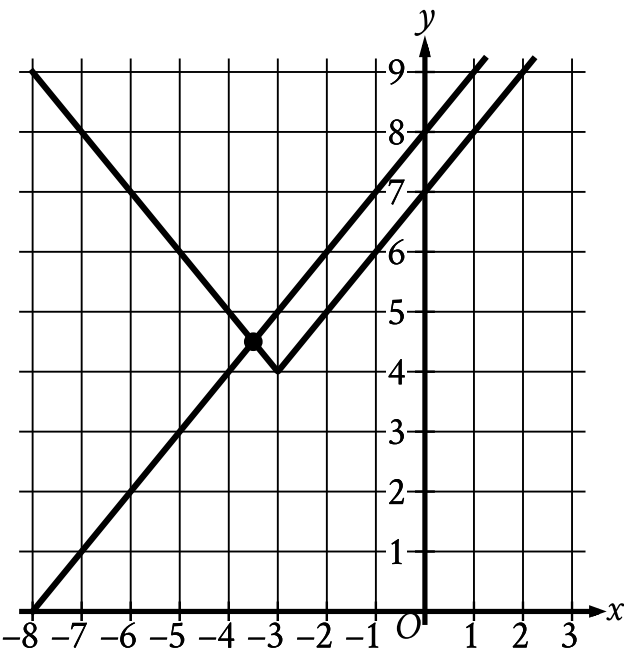
A solution to the given system of equations is (x, y) . What is the value of xy ?

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

Question ID c6d78f38

Assessment	Test	Domain	Skill	Difficulty
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ID: c6d78f38



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. $(0, 8)$
- B. $(\frac{7}{2}, \frac{9}{2})$
- C. $(-\frac{7}{2}, \frac{9}{2})$
- D. $(-3, 4)$

Question ID c5e573c2

Assessment	Test	Domain	Skill	Difficulty
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ID: c5e573c2

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

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 91c00638

Assessment	Test	Domain	Skill	Difficulty
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ID: 91c00638

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

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 8e2874df

Assessment	Test	Domain	Skill	Difficulty
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ID: 8e2874df

$$q - 29r = s$$

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 83ac0391

Assessment	Test	Domain	Skill	Difficulty
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ID: 83ac0391

$k^2 - 53 = 91$

What is the positive solution to the given equation?

- A. 144
- B. 72
- C. 38
- D. 12

Question ID 22758602

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Advanced Math	Nonlinear equations in one variable and systems of equations in two variables	Medium

ID: 22758602

$$\begin{aligned}x &= 49 \\ y &= \sqrt{x} + 9\end{aligned}$$

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

- A. 16
- B. 40
- C. 81
- D. 130

Question ID 8b0c1b88

Assessment	Test	Domain	Skill	Difficulty
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ID: 8b0c1b88

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

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

Question ID 857bd220

Assessment	Test	Domain	Skill	Difficulty
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ID: 857bd220

$\frac{x^2}{25} = 36$

What is a solution to the given equation?

- A. 6
- B. 30
- C. 450
- D. 900

Question ID 2335db65

Assessment	Test	Domain	Skill	Difficulty
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ID: 2335db65

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

What is the positive solution to the given equation?

Question ID d60a1fdc

Assessment	Test	Domain	Skill	Difficulty
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ID: d60a1fdc

$$\begin{aligned}y &= 5x + 4 \\ y &= 5x^2 + 4\end{aligned}$$

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

- A. $(0, 0)$
- B. $(0, 4)$
- C. $(8, 44)$
- D. $(8, 84)$

Question ID 69544d84

Assessment	Test	Domain	Skill	Difficulty
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ID: 69544d84

$$y - 57 = px$$

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

- A. $y = 57x + p$
- B. $y = px + 57$
- C. $y = 57px$
- D. $y = \frac{px}{57}$

Question ID 83bf92a1

Assessment	Test	Domain	Skill	Difficulty
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ID: 83bf92a1

$$6r = 7s + t$$

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. $s = \frac{6r-t}{7}$