# Question ID d1b66ae6

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: d1b66ae6**

3.1

$-x+y=-3.5$

$x+3y=9.5$

If $(x, y)$ satisfies the system of equations above, what is the value of $y$ ?

$4y = 6$

$y = \frac{6}{4}$

$= \frac{3}{2}$ // or 1.5 //

$x = 5$ แกม

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Desmos → ( 5 , 1.5 )
//

# Question ID 70feb725

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 70feb725**

3.2

During a month, Morgan ran *r* miles at 5 miles per hour and biked *b* miles at 10 miles per hour. She ran and biked a total of 200 miles that month, and she biked for twice as many hours as she ran. What is the total number of miles that Morgan biked during the month?

A. 80

B. 100

C. 120

D. 160

$5r + 10b = 200$ $\quad s = vt$

b
r

$b = 2r$

Desmos → $(r, b)$

→ $(8, 16)$

$10b = 10(16) = 160$ //

# Question ID e1248a5c

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: e1248a5c** 3.3

In the system of equations below, $a$ and $c$ are constants.

$\frac{1}{2}x+\frac{1}{3}y=\frac{1}{6}$

$ax+y=c$

If the system of equations has an infinite number of solutions $(x,y)$, what is the value of $a$ ?

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

B. $0$

C. $\frac{1}{2}$

D. $\frac{3}{2}$

$\text{Slope}_1 = \text{Slope}_2$ and $C_1 = C_2$

$-\frac{1}{2} \times 3 = -\frac{a}{1}$

$-\frac{3}{2} = -a$

$a = \frac{3}{2}$ //

$C = \frac{1}{6}$ เท่ากัน

# Question ID 52cb8ea4

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 52cb8ea4**

3.4

$7x-5y=4$

$4x-8y=9$

If $(x,y)$ is the solution to the system of equations above, what is the value of $3x+3y$?

A. $-13$

B. $-5$

C. 5

D. 13

Desmos → $(-0.36111, -1.30556)$

$3x+3y = -5.00001$

$\approx -5$

ระวังถ้าเป็นข้อเติมคำ

# Question ID d7bf55e1

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: d7bf55e1**

3.5

A movie theater sells two types of tickets, adult tickets for $12 and child tickets for $8. If the theater sold 30 tickets for a total of $300, how much, in dollars, was spent on adult tickets? (Disregard the $ sign when gridding your answer.)

$$x + y = 30$$
$$12x + 8y = 300$$

Desmos → (15, 15)

$$12x = 12(15)$$
$$= 180$$ //

# Question ID f718c9cf

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: f718c9cf**

3.6

$$5x + 14y = 45$$
$$10x + 7y = 27$$

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

Desmos → (0.6, 3)

$xy = 0.6(3)$

$= 1.8$ //

# Question ID 466b87e3

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 466b87e3**

3.7

$$y = \frac{1}{2}x + 8$$

$$y = cx + 10$$

In the system of equations above, $c$ is a constant. If the system has no solution, what is the value of $c$ ?

$\text{Slope}_1 = \text{Slope}_2$ and $C_1 \neq C_2$

$\frac{1}{2} = c$ $\quad 10 \neq 8$

$c = \frac{1}{2}$ or $0.5$

// //

# Question ID e2e3942f

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: e2e3942f**

3.8

$y = 2x + 1$

$y = ax - 8$

In the system of equations above, $a$ is a constant. If the system of equations has no solution, what is the value of $a$ ?

Slope$_1$ = Slope$_2$ and $C_1 \neq C_2$

$2 = a$ $\quad$ $1 \neq -8$

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

B. 0

C. 1

D. 2

# Question ID 1e11190a

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 1e11190a**

3.9

Store A sells raspberries for $5.50 per pint and blackberries for $3.00 per pint. Store B sells raspberries for $6.50 per pint and blackberries for $8.00 per pint. A certain purchase of raspberries and blackberries would cost $37.00 at Store A or $66.00 at Store B. How many pints of blackberries are in this purchase?

A. 4

B. 5

C. 8

D. 12

$5.5x + 3y = 37$

$6.5x + 8y = 66$

Desmos → (4, 5)

# Question ID 567ac7ab

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 567ac7ab**

3.10

One of the two equations in a linear system is $2x+6y=10$. The system has no solution. Which of the following could be the other equation in the system?

A. $x+3y=5$

B. $x+3y=-20$

C. $6x-2y=0$

D. $6x+2y=10$

$x+3y=5$

$\text{Slope}_1 = \text{Slope}_2$ and $c_1 \neq c_2$

Desmos

# Question ID 73b3b7d8

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 73b3b7d8**

3.11

$$5y = 10x + 11$$
$$-5y = 5x - 21$$

The solution to the given system of equations is $(x, y)$. What is the value of $30x$?

Desmos → (0.6667 , 3.5333)

$30x = 30(0.6667)$

$= 20.001$

$\approx 20$ //  ! ระวังถ้าเป็นข้อเติมคำ

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$0 = 15x - 10$

$x = \frac{10}{15}$

$30x = 30\left(\frac{10}{15}\right)$

$= 20$ //

# Question ID a71b1bc1

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: a71b1bc1**

3.12

A piece of wire with a length of $32$ inches is cut into two parts. One part has a length of $x$ inches, and the other part has a length of $y$ inches. The value of $x$ is $4$ more than $3$ times the value of $y$. What is the value of $x$?

$x + y = 32$

$x = 3y + 4$

Desmos → $(25, 7)$

# Question ID b5f62071

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: b5f62071**

~~3.13~~ 3.14

$$48x - 64y = 48y + 24$$
$$ry = \frac{1}{8} - 12x$$

In the given system of equations, $r$ is a constant. If the system has no solution, what is the value of $r$?

Desmos → เลื่อน r → r = −28 // เช็คแค่ Slope พอ

จัดสมการ

$-112y = -48x + 24$

① $y = \frac{3}{7}x - \frac{3}{14}$

② $y = -\frac{12x}{r} - \frac{1}{8r}$

$\text{Slope}_1 = \text{Slope}_2$ and $C_1 \neq C_2$

$\frac{3}{7} = -\frac{12}{r}$

$r = -28$ //

3.13

$$\frac{7}{8}y - \frac{5}{8}x = \frac{4}{7} - \frac{7}{8}y$$
$$\frac{5}{4}x + \frac{7}{4} = py + \frac{15}{4}$$

In the given system of equations, p is a constant. If the system has no solution, what is the value of p?

Desmos → เลื่อน p → p = 3.5 //

ให้ดู Scale ใหญ่ ด้วยว่าไม่มีจุดตัด

เช็คแค่ Slope พอ

จัดสมการ

$\frac{14}{8}y = \frac{5}{8}x + \frac{4}{7}$

$\div \frac{14}{8}$ $y = \frac{5}{14}x + \frac{16}{49}$ ①

$py = \frac{5}{4}x - \frac{8}{14}$

$y = \frac{5}{4p}x - \frac{8}{14p}$ ②

$\text{Slope}_1 = \text{Slope}_2$ and $C_1 \neq C_2$

$\frac{5}{14} = \frac{5}{4p}$

$14 = 4p$

$p = 3.5$ //

# Question ID 1b1deebe

| Assessment | Test | Domain | Skill | Difficulty |
|---|---|---|---|---|
| SAT | Math | Algebra | Systems of two linear equations in two variables | ■■■ |

**ID: 1b1deebe**

~~3.14~~
3.15

$$ax + by = 72$$
$$6x + 2by = 56$$

In the given system of equations, $a$ and $b$ are constants. The graphs of these equations in the *xy*-plane intersect at the point $(4, y)$. What is the value of $a$?

A. $3$

B. $4$

C. $6$

~~D.~~ $14$

$4a + by = 72$

$6(4) + 2by = 56$

$2by = D$

$4a + D = 72$

$24 + 2D = 56$

Desmos → $(a, D)$

→ $(14, 16)$