

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	■ ■ □

ID: 7a5a74a6

2.1

$$3(2x-6)-11=4(x-3)+6$$

If x is the solution to the equation above,
what is the value of $x-3$?

A. $\frac{23}{2}$

~~B. $\frac{17}{2}$~~

C. $\frac{15}{2}$

D. $-\frac{15}{2}$

$$\begin{aligned}
 \text{NO! } 2x-6 &= 2(x-3) \quad \text{no!} \\
 3(2)(x-3)-11 &= 4(x-3)+6 \\
 6y-11 &= 4y+6 \\
 2y &= 17 \\
 y &= \frac{17}{2} //
 \end{aligned}$$

Desmos $x = \frac{23}{2}$

$$x-3 = \frac{17}{2} //$$

Question ID aa85b138

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ID: aa85b138

2.2

$$\underline{2n} + 6 = 14$$

A tree had a height of 6 feet when it was planted. The equation above can be used to find how many years n it took the tree to reach a height of 14 feet. Which of the following is the best interpretation of the number 2 in this context?

Slope

A. The number of years it took the tree to double its height

n

~~B. The average number of feet that the tree grew per year~~

C. The height, in feet, of the tree when the tree was 1 year old

$n=1 / y=8$

D. The average number of years it takes similar trees to grow 14 feet

$n=4$

Question ID 15daa8d6

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ID: 15daa8d6

2.3

$$2x + 16 = a(x + 8)$$

In the given equation, a is a constant. If the equation has infinitely many solutions, what is the value of a ?

$$\underline{2x} + 16 = \underline{9x} + 89$$

$$a = 2 //$$

$$x + 8 \xrightarrow{\times 2} 2x + 16 \quad a = 2 //$$

Desmos คือค่า a ให้ $a = 2 //$

Question ID 12ee1edc

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ID: 12ee1edc

2.4

$$(b-2)x = 8$$

In the given equation, b is a constant. If the equation has no solution, what is the value of b ?

- ☒ A. 2
- ☐ B. 4
- ☐ C. 6
- ☐ D. 10

Desmos $(b-2)x = y$ ① แทน b ในข้อ

$y = 8$ ②

$b = 2 //$

$$\begin{aligned} bx - 2x &= 8 \\ \underline{2x - 2x} & \\ 0 &= 8 \\ b &= 2 // \end{aligned}$$

Question ID 70e29454

Assessment	Test	Domain	Skill	Difficulty
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ID: 70e29454

2.5

$$a(3-x) - b = -1 - 2x$$

In the equation above, a and b are constants. If the equation has infinitely many solutions, what are the values of a and b ?

- A. $a = 2$ and $b = 1$
- ~~B. $a = 2$ and $b = 7$~~
- C. $a = -2$ and $b = 5$
- D. $a = -2$ and $b = -5$

Desmos แทน a/b ในข้อ
 $y = a(3-x) - b$
 $y = -1 - 2x$
 $a = 2 / b = 7 //$

Question ID f09097b1

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ID: f09097b1

2.6

An agricultural scientist studying the growth of corn plants recorded the height of a corn plant at the beginning of a study and the height of the plant each day for the next 12 days. The scientist found that the height of the plant increased by an average of 1.20 centimeters per day for the 12 days. If the height of the plant on the last day of the study was 36.8 centimeters, what was the height, in centimeters, of the corn plant at the beginning of the study?

Slope = 1.2

X = 12

X = 12 / y = 36.8

$$y = 1.2x + C$$

$$36.8 = 1.2(12) + C$$

$$C = 22.4 //$$

Question ID 4f669597

Assessment	Test	Domain	Skill	Difficulty
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ID: 4f669597

2.7

$$2(p+1)+8(p-1)=5p$$

What value of p is the solution of the equation above?

Desmos $\rightarrow p = 1.2 //$

$$10p - 6 = 5p$$
$$5p = 6$$
$$p = 1.2 //$$

Question ID ce314070

Assessment	Test	Domain	Skill	Difficulty
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ID: ce314070

2.8

If $4x - \frac{1}{2} = -5$, what is the value of $8x - 1$?

- A. 2
- B. $-\frac{9}{8}$
- C. $-\frac{5}{2}$
- ~~D. -10~~
- $4x - \frac{1}{2} = -5$
- $8x - 1 = -10$
- $8x = -9$
- $8x - 1 = -10 //$

Question ID 36ab4122

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ID: 36ab4122

2.9

Megan's regular wage at her job is p dollars per hour for the first 8 hours of work in a day plus 1.5 times her regular hourly wage for work in excess of 8 hours that day. On a given day, Megan worked for 10 hours, and her total earnings for that day were \$137.50. What is Megan's regular hourly wage?

- A. \$11.75
- ~~B. \$12.50~~
- C. \$13.25
- D. \$13.75

$$137.5 = 8p + 1.5(10-8)p$$

$$p = 12.5$$

X	Y
8	8p
<hr/>	
9	$8p + 1.5(9-8)p$
10	$8p + 1.5(10-8)p$

Question ID 5ad9eff0

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ID: 5ad9eff0

2.10

The width of a rectangular dance floor is w feet. The length of the floor is 6 feet longer than its width. Which of the following expresses the perimeter, in feet, of the dance floor in terms of w ?

A. $2w + 6$

$$L = W + 6$$

~~B. $4w + 12$~~

$$P = 2W + 2L$$

C. $w^2 + 6$ X

$$P = 2W + 2(W + 6) = \underline{4W} + 16$$

D. $w^2 + 6w$ X

Question ID 45bba652

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ID: 45bba652

2.11

If $2(x-5) + 3(x-5) = 10$, what is

the value of $x-5$?

~~A. 2~~

B. 5

C. 7

D. 12

y

$$2y + 3y = 10$$

$$y = 2 //$$

Question ID eafdbbbd

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ID: eafdbbbd

2.12

$$\frac{1}{4}(x+5) - \frac{1}{3}(x+5) = -7$$

What value of x is the solution to the given equation?

- A. -12
- B. -5
- ~~C. 79~~
- D. 204

$$\frac{1}{4}y - \frac{1}{3}y = -7$$

$$-\frac{1}{12}y = -7$$

$$y = 84$$

$$x+5 = 84$$

$$x = 79$$

Desmos $\rightarrow x = 79 //$