

SAT Math

Linear Equations in One Variable 2

Question # ID**2.1** 7a5a74a6

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

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

2.2 aa85b138

$$2n + 6 = 14$$

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?

- A. The number of years it took the tree to double its height
- 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
- D. The average number of years it takes similar trees to grow 14 feet

2.3 15daa8d6

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

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

2.4 12ee1edc

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

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

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Question # ID**2.5** 70e29454

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

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 $b = -5$

2.6 f09097b1

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?

2.7 4f669597

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

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

2.8 ce314070

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

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Question # ID**2.9** 36ab4122

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

2.10 5ad9eff0

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. $2w + 6$
- B. $4w + 12$
- C. $w^2 + 6$
- D. $w^2 + 6w$

2.11 45bba652

If $2(x - 5) + 3(x - 5) = 10$, what is the value of $x - 5$?

- A. 2
- B. 5
- C. 7
- D. 12

2.12 eafdbbbd

$\frac{1}{4}(x + 5) - \frac{1}{3}(x + 5) = -7$
What value of x is the solution to the given equation?

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

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Question # ID**2.13** 8c515062

A candle is made of 17 ounces of wax. When the candle is burning, the amount of wax in the candle decreases by 1 ounce every 4 hours. If 6 ounces of wax remain in this candle, for how many hours has it been burning?

- A. 3
- B. 6
- C. 24
- D. 44

2.14 ce6b52d8

If $2(3t - 10) + t = 40 + 4t$, what is the value of $3t$?

2.15 620abf36

If $5(x + 4) = 4(x + 4) + 29$, what is the value of $x + 4$?

- A. -4
- B. 25
- C. 29
- D. 33

2.16 76f29fa5

The cost to rent a commercial fishing boat from a certain company is \$950 for the first 2 hours and an additional \$50 per hour for each hour after the first 2 hours. If the total cost to rent the commercial fishing boat from the company for t hours, where $t > 2$, is \$1,100, which equation represents this situation?

- A. $950(t - 2) + 50t = 1,100$
- B. $950(2t) + 50t = 1,100$
- C. $950 + 50(t - 2) = 1,100$
- D. $950 + 50(2t) = 1,100$

2.17 feb78194

A museum rents tablets to visitors. The museum earns revenue of \$14 for each tablet rented for the day. On Wednesday, the museum earned \$406 in profit from renting tablets after paying daily expenses of \$112. How many tablets did the museum rent on Wednesday? (profit = total revenue - total expenses)

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Question # ID**2.18** 018a2704

If $46 = 16 + 2(x - 8)$, what is the value of $2(x - 8)$?

- A. 16
- B. 23
- C. 30
- D. 38

2.19 9d4270fe

A company that creates and sells tape dispensers calculates its monthly profit, in dollars, by subtracting its fixed monthly costs, in dollars, from its monthly sales revenue, in dollars. The equation $15,000 = 2.00x - 4,500$ represents this situation for a month where x tape dispensers are created and sold. Which statement is the best interpretation of $2.00x$ in this context?

- A. The monthly sales revenue, in dollars, from selling x tape dispensers
- B. The monthly sales revenue, in dollars, from each tape dispenser sold
- C. The monthly cost, in dollars, of creating each tape dispenser
- D. The monthly cost, in dollars, of creating x tape dispensers