SAT Math

Linear Equations in One Variable 3

Question # **ID**

3.1 2937ef4f

Hector used a tool called an auger to remove corn from a storage bin at a constant rate. The bin contained 24,000 bushels of corn when Hector began to use the auger. After 5 hours of using the auger, 19,350 bushels of corn remained in the bin. If the auger continues to remove corn at this rate, what is the total number of hours Hector will have been using the auger when 12,840 bushels of corn remain in the bin?

A. 3

B. 7

C. 8

D. 12

3.2 b7e6394d

Alan drives an average of 100 miles each week. His car can travel an average of 25 miles per gallon of gasoline. Alan would like to reduce his weekly expenditure on gasoline by $5. Assuming gasoline costs $4 per gallon, which equation can Alan use to determine how many fewer average miles, *m*, he should drive each week?

A. $\frac{25}{4}m = 95$

B. $\frac{25}{4}m = 5$

C. $\frac{4}{25}m = 95$

D. $\frac{4}{25}m = 5$

3.3 e6cb2402

$$3(kx + 13) = \frac{48}{17}x + 36$$

In the given equation, k is a constant. The equation has no solution. What is the value of k?

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3.4 ae2287e2

A certain product costs a company $65 to make. The product is sold by a salesperson who earns a commission that is equal to 20% of the sales price of the product. The profit the company makes for each unit is equal to the sales price minus the combined cost of making the product and the commission. If the sales price of the product is $100, which of the following equations gives the number of units, u, of the product the company sold to make a profit of $6,840 ?

A. $(100(1-0.2)-65)u=6{,}840$

B. $(100-65)(1-0.8)u=6{,}840$

C. $0.8(100)-65u=6{,}840$

D. $(0.2(100)+65)u=6{,}840$

3.5 771bd0ca

$$5(t+3)-7(t+3)=38$$

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

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Question # **ID**

3.6 90095507

Townsend Realty Group Investments

Property address	Purchase price (dollars)	Monthly rental price (dollars)
Clearwater Lane	128,000	950
Driftwood Drive	176,000	1,310
Edgemont Street	70,000	515
Glenview Street	140,000	1,040
Hamilton Circle	450,000	3,365

The Townsend Realty Group invested in the five different properties listed in the table above. The table shows the amount, in dollars, the company paid for each property and the corresponding monthly rental price, in dollars, the company charges for the property at each of the five locations. Townsend Realty purchased the Glenview Street property and received a 40% discount off the original price along with an additional 20% off the discounted price for purchasing the property in cash. Which of the following best approximates the original price, in dollars, of the Glenview Street property?

A. $350,000

B. $291,700

C. $233,300

D. $175,000

3.7 0cb57740

Each side of a 30-sided polygon has one of three lengths. The number of sides with length 8 centimeters (cm) is 5 times the number of sides n with length 3 cm. There are 6 sides with length 4 cm. Which equation must be true for the value of n?

A. $5n + 6 = 30$

B. $6n + 6 = 30$

C. $8n + 3n + 4n = 30$

D. $8(5n) + 3n + 4(6) = 30$

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3.8 aee9fd2d

If $\frac{x+6}{3} = \frac{x+6}{13}$, the value of $x + 6$ is between which of the following pairs of values?

A. -7 and -3

B. -2 and 2

C. 2 and 7

D. 8 and 13

3.9 3f8a701b

The equation $9x + 5 = a(x + b)$, where *a* and *b* are constants, has no solutions. Which of the following must be true?

I. $a = 9$

II. $b = 5$

III. $b \neq \frac{5}{9}$

A. None

B. I only

C. I and II only

D. I and III only

3.10 628300a9

A science teacher is preparing the 5 stations of a science laboratory. Each station will have either Experiment A materials or Experiment B materials, but not both. Experiment A requires 6 teaspoons of salt, and Experiment B requires 4 teaspoons of salt. If *x* is the number of stations that will be set up for Experiment A and the remaining stations will be set up for Experiment B, which of the following expressions represents the total number of teaspoons of salt required?

A. $5x$

B. $10x$

C. $2x + 20$

D. $10x + 20$

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Question # **ID**

3.11 38bf4e04

A factory makes 9-inch, 7-inch, and 4-inch concrete screws. During a certain day, the number of 9-inch concrete screws that the factory makes is 5 times the number n of 7-inch concrete screws, and the number of 4-inch concrete screws is 22. During this day, the factory makes 100 concrete screws total. Which equation represents this situation?

A. $9(5n) + 7n + 4(22) = 100$

B. $9n + 7n + 4n = 100$

C. $5n + 22 = 100$

D. $6n + 22 = 100$

3.12 25e1cfed

How many solutions does the equation $10(15x - 9) = -15(6 - 10x)$ have?

A. Exactly one

B. Exactly two

C. Infinitely many

D. Zero

3.13 f5ff91b2

If $\frac{x-5}{7} = \frac{x-5}{9}$, the value of $x - 5$ is between which of the following pairs of values?

A. -9 and -7

B. -3 and 3

C. 4.5 and 5.5

D. 6.75 and 9.25

3.14 429fb7c0

What value of t is the solution to the equation $0.8t - 0.46 = 8(t - 0.001) + 1.9$?

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Question #	ID

3.15 f14484a5

A manufacturing plant makes 10-inch, 9-inch, and 7-inch frying pans. During a certain day, the number of 10-inch frying pans that the manufacturing plant makes is 4 times the number n of 9-inch frying pans it makes, and the number of 7-inch frying pans it makes is 10. During this day, the manufacturing plant makes 100 frying pans total. Which equation represents this situation?

A. $10(4n) + 9n + 7(10) = 100$

B. $10n + 9n + 7n = 100$

C. $4n + 10 = 100$

D. $5n + 10 = 100$

3.16 ac472881

$$\frac{12x+28}{4} - \frac{s}{13} = r(x - 8)$$

In the given equation, s and r are constants, and $s > 0$. If the equation has infinitely many solutions, what is the value of s?