

Question ID b22b77e5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: b22b77e5

If $5 - 7(2 - 4x) = 16 - 8(2 - 4x)$, what is the value of $2 - 4x$?

Question ID 87277ccb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 87277ccb

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

Question ID 019d6a10

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 019d6a10

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

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

Question ID 8f5aa705

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 8f5aa705

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

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

Question ID 70b4888c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 70b4888c

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

Question ID f482a8e9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: f482a8e9

A line segment that has a length of **115 centimeters (cm)** is divided into three parts. One part is **47 cm** long. The other two parts have lengths that are equal to each other. What is the length, in **cm**, of one of the other two parts of equal length?

Question ID b4b0cd06

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: b4b0cd06

$-49x = -98x$

How many solutions does the given equation have?

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

Question ID a0ee88cc

Assessment	Test	Domain	Skill	Difficulty
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ID: a0ee88cc

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

Question ID 3641c447

Assessment	Test	Domain	Skill	Difficulty
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ID: 3641c447

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

Question ID d184436c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: d184436c

$$\frac{1}{3}(x + 6) - \frac{1}{2}(x + 6) = -8$$

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

Question ID 53438dc8

Assessment	Test	Domain	Skill	Difficulty
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ID: 53438dc8

$$4x + 12 = \frac{a(x+3)}{2}$$

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

- A. 0
- B. 3
- C. 8
- D. 12

Question ID 681ea2fa

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 681ea2fa

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

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

Question ID cd9ded9a

Assessment	Test	Domain	Skill	Difficulty
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ID: cd9ded9a

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. $950 + 50(2t) = 1,100$

Question ID e8136b69

Assessment	Test	Domain	Skill	Difficulty
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ID: e8136b69

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

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 ?

Question ID 3dcf6a65

Assessment	Test	Domain	Skill	Difficulty
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ID: 3dcf6a65

A bowl contains **20** ounces of water. When the bowl is uncovered, the amount of water in the bowl decreases by **1** ounce every **4** days. If **9** ounces of water remain in this bowl, for how many days has it been uncovered?

- A. **3**
- B. **7**
- C. **36**
- D. **44**

Question ID c7d8a4ee

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: c7d8a4ee

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~~

Question ID a521b123

Assessment	Test	Domain	Skill	Difficulty
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ID: a521b123

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. $6n + 22 = 100$

Question ID ca8a54ef

Assessment	Test	Domain	Skill	Difficulty
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ID: ca8a54ef

How many solutions does the equation $12(x - 3) = -3(x + 12)$ have?

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

Question ID bc52ce02

Assessment	Test	Domain	Skill	Difficulty
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ID: bc52ce02

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

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

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

Question ID 75e5fcb4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 75e5fcb4

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

Question ID d8676331

Assessment	Test	Domain	Skill	Difficulty
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ID: d8676331

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**)

Question ID e64cc091

Assessment	Test	Domain	Skill	Difficulty
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ID: e64cc091

If $\frac{6}{7}p + 18 = 54$, what is the value of $7p$?

Question ID 888b76fd

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: 888b76fd

If $9(4 - 3x) + 2 = 8(4 - 3x) + 18$, what is the value of $4 - 3x$?

- A. -16
- B. -4
- C. 4
- D. 16

Question ID cac0cefd

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear equations in one variable	Hard

ID: cac0cefd

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. $5n + 10 = 100$

Question ID a45f311e

Assessment	Test	Domain	Skill	Difficulty
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ID: a45f311e

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