

Question ID 8bb5aaf8

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 8bb5aaf8

If $3x - 27 = 24$, what is the value of $x - 9$?

- A. 1
- B. 8
- C. 24
- D. 35

ID: 8bb5aaf8 Answer

Correct Answer: B

Rationale

Choice B is correct. Dividing each side of the given equation by 3 yields $x - 9 = 8$. Therefore, the value of $x - 9$ is 8.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect. This is the value of $3x - 27$, not $x - 9$.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Medium

Question ID 1cc17260

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 1cc17260

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

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

ID: 1cc17260 Answer

Correct Answer: 2

Rationale

The correct answer is **2**. An equation with one variable, x , has infinitely many solutions only when both sides of the equation are equal for any defined value of x . It's given that $2x + 16 = a(x + 8)$, where a is a constant. This equation can be rewritten as $2(x + 8) = a(x + 8)$. If this equation has infinitely many solutions, then both sides of this equation are equal for any defined value of x . Both sides of this equation are equal for any defined value of x when $2 = a$. Therefore, if the equation has infinitely many solutions, the value of a is **2**.

Alternate approach: If the given equation, $2x + 16 = a(x + 8)$, has infinitely many solutions, then both sides of this equation are equal for any value of x . If $x = 0$, then substituting **0** for x in $2x + 16 = a(x + 8)$ yields $2(0) + 16 = a(0 + 8)$, or $16 = 8a$. Dividing both sides of this equation by **8** yields $2 = a$.

Question Difficulty: Medium

Question ID 3b188791

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 3b188791

$$3x + 21 = 3x + k$$

In the given equation, k is a constant. The equation has infinitely many solutions. What is the value of k ?

ID: 3b188791 Answer

Correct Answer: 21

Rationale

The correct answer is **21**. It's given that the equation $3x + 21 = 3x + k$ has infinitely many solutions. If an equation in one variable has infinitely many solutions, then the equation is true for any value of the variable. Subtracting $3x$ from both sides of the given equation yields $k = 21$. Since this equation must be true for any value of x , the value of k is **21**.

Question Difficulty: Medium

Question ID d73f1c33

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: d73f1c33

If $x = 40$, what is the value of $x + 6$?

- A. 34
- B. 40
- C. 46
- D. 64

ID: d73f1c33 Answer

Correct Answer: C

Rationale

Choice C is correct. It's given that $x = 40$. Adding 6 to both sides of this equation yields $x + 6 = 40 + 6$, or $x + 6 = 46$. Therefore, the value of $x + 6$ is 46 .

Choice A is incorrect. This is the value of $x - 6$, not $x + 6$.

Choice B is incorrect. This is the value of x , not $x + 6$.

Choice D is incorrect. This is the value of $x + 24$, not $x + 6$.

Question Difficulty: Easy

Question ID 710119ea

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 710119ea

John paid a total of **\$165** for a microscope by making a down payment of **\$37** plus p monthly payments of **\$16** each. Which of the following equations represents this situation?

- A. $16p - 37 = 165$
- B. $37p - 16 = 165$
- C. $16p + 37 = 165$
- D. $37p + 16 = 165$

ID: 710119ea Answer

Correct Answer: C

Rationale

Choice C is correct. It's given that John made a **\$16** payment each month for p months. The total amount of these payments can be represented by the expression $16p$. The down payment can be added to that amount to find the total amount John paid, yielding the expression $16p + 37$. It's given that John paid a total of **\$165**. Therefore, the expression for the total amount John paid can be set equal to that amount, yielding the equation $16p + 37 = 165$.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID e7743fef

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: e7743fef

If $2 + x = 60$, what is the value of $16 + 8x$?

ID: e7743fef Answer

Correct Answer: 480

Rationale

The correct answer is **480**. Multiplying both sides of the given equation by 8 yields $8(2 + x) = 8(60)$, or $16 + 8x = 480$. Therefore, if $2 + x = 60$, the value of $16 + 8x$ is **480**.

Question Difficulty: Easy

Question ID 5c60c35f

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 5c60c35f

$4x + 5 = 165$

What is the solution to the given equation?

ID: 5c60c35f Answer

Correct Answer: 40

Rationale

The correct answer is **40**. Subtracting **5** from both sides of the given equation yields **$4x = 160$** . Dividing both sides of this equation by **4** yields **$x = 40$** . Therefore, the solution to the given equation is **40**.

Question Difficulty: Easy

Question ID da7cded0

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: da7cded0

A gym charges its members a onetime **\$36** enrollment fee and a membership fee of **\$19** per month. If there are no charges other than the enrollment fee and the membership fee, after how many months will a member have been charged a total of **\$188** at the gym?

- A. **4**
- B. **5**
- C. **8**
- D. **10**

ID: da7cded0 Answer

Correct Answer: C

Rationale

Choice C is correct. It's given that a gym charges its members a onetime **\$36** enrollment fee and a membership fee of **\$19** per month. Let x represent the number of months at the gym after which a member will have been charged a total of **\$188**. If there are no charges other than the enrollment fee and the membership fee, the equation $36 + 19x = 188$ can be used to represent this situation. Subtracting **36** from both sides of this equation yields $19x = 152$. Dividing both sides of this equation by **19** yields $x = 8$. Therefore, a member will have been charged a total of **\$188** after **8** months at the gym.

Choice A is incorrect. A member will have been charged a total of $\$(36 + 19 \times 4)$, or **\$112**, after **4** months at the gym.

Choice B is incorrect. A member will have been charged a total of $\$(36 + 19 \times 5)$, or **\$131**, after **5** months at the gym.

Choice D is incorrect. A member will have been charged a total of $\$(36 + 19 \times 10)$, or **\$226**, after **10** months at the gym.

Question Difficulty: Easy

Question ID f193e75a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: f193e75a

If $5x = 20$, what is the value of $15x$?

- A. 7
- B. 12
- C. 23
- D. 60

ID: f193e75a Answer

Correct Answer: D

Rationale

Choice D is correct. It's given that $5x = 20$. Multiplying both sides of this equation by 3 yields $15x = 60$. Therefore, the value of $15x$ is 60.

Choice A is incorrect and may result from conceptual errors.

Choice B is incorrect and may result from conceptual errors.

Choice C is incorrect and may result from conceptual errors.

Question Difficulty: Easy

Question ID d737500a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: d737500a

If $x = 7$, what is the value of $x + 20$?

- A. 13
- B. 20
- C. 27
- D. 34

ID: d737500a Answer

Correct Answer: C

Rationale

Choice C is correct. It's given that $x = 7$. Substituting 7 for x into the given expression $x + 20$ yields $7 + 20$, which is equivalent to 27.

Choice A is incorrect. This is the value of $x + 6$.

Choice B is incorrect. This is the value of $x + 13$.

Choice D is incorrect. This is the value of $x + 27$.

Question Difficulty: Easy

Question ID 740a23e7

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 740a23e7

$k + 12 = 336$

What is the solution to the given equation?

- A. 28
- B. 324
- C. 348
- D. 4,032

ID: 740a23e7 Answer

Correct Answer: B

Rationale

Choice B is correct. Subtracting **12** from both sides of the given equation yields $k = 324$. Therefore, the solution to the given equation is **324**.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID 8229671d

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 8229671d

$13x = 112 - x$

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

ID: 8229671d Answer

Correct Answer: 8

Rationale

The correct answer is 8. Adding x to both sides of the given equation yields $14x = 112$. Dividing both sides of this equation by 14 yields $x = 8$.

Question Difficulty: Easy

Question ID c4b690d2

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: c4b690d2

$3x + 5(x + 4) = 76$

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

- A. 7
- B. 8
- C. 56
- D. 72

ID: c4b690d2 Answer

Correct Answer: A

Rationale

Choice A is correct. Applying the distributive property on the left-hand side of the given equation yields $3x + 5x + 20 = 76$, or $8x + 20 = 76$. Subtracting 20 from each side of this equation yields $8x = 56$. Dividing each side of this equation by 8 yields $x = 7$.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect. This is the solution to the equation $x + 4 = 76$, not $3x + 5(x + 4) = 76$.

Question Difficulty: Easy

Question ID c98d15e1

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: c98d15e1

$x + 40 = 95$

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

ID: c98d15e1 Answer

Correct Answer: 55

Rationale

The correct answer is **55**. Subtracting **40** from both sides of the given equation yields $x = 55$. Therefore, the value of x is **55**.

Question Difficulty: Easy

Question ID dd42a36b

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: dd42a36b

The perimeter of an isosceles triangle is **83** inches. Each of the two congruent sides of the triangle has a length of **24** inches. What is the length, in inches, of the third side?

ID: dd42a36b Answer

Correct Answer: 35

Rationale

The correct answer is **35**. It's given that the perimeter of an isosceles triangle is **83** inches and that each of the two congruent sides has a length of **24** inches. The perimeter of a triangle is the sum of the lengths of its three sides. The equation **$24 + 24 + x = 83$** can be used to represent this situation, where **x** is the length, in inches, of the third side. Combining like terms on the left-hand side of this equation yields **$48 + x = 83$** . Subtracting **48** from both sides of this equation yields **$x = 35$** . Therefore, the length, in inches, of the third side is **35**.

Question Difficulty: Easy

Question ID db7305ee

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: db7305ee

If $7x = 28$, what is the value of $8x$?

- A. 21
- B. 32
- C. 168
- D. 224

ID: db7305ee Answer

Correct Answer: B

Rationale

Choice B is correct. Dividing both sides of the given equation $7x = 28$ by 7 yields $x = 4$. Substituting 4 for x in the expression $8x$ yields $8(4)$, which is equivalent to 32.

Choice A is incorrect. This is the value of $\frac{21}{4}x$.

Choice C is incorrect. This is the value of $42x$.

Choice D is incorrect. This is the value of $56x$.

Question Difficulty: Easy

Question ID 5f69b45d

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 5f69b45d

What value of p satisfies the equation $5p + 180 = 250$?

- A. 14
- B. 65
- C. 86
- D. 250

ID: 5f69b45d Answer

Correct Answer: A

Rationale

Choice A is correct. Subtracting 180 from both sides of the given equation yields $5p = 70$. Dividing both sides of this equation by 5 yields $p = 14$. Therefore, the value of p that satisfies the equation $5p + 180 = 250$ is 14.

Choice B is incorrect. This value of p satisfies the equation $5p + 180 = 505$.

Choice C is incorrect. This value of p satisfies the equation $5p + 180 = 610$.

Choice D is incorrect. This value of p satisfies the equation $5p + 180 = 1,430$.

Question Difficulty: Easy

Question ID 60f35c6d

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 60f35c6d

$8x - 7x + 130 = 260$

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

ID: 60f35c6d Answer

Correct Answer: 130

Rationale

The correct answer is **130**. It's given that $8x - 7x + 130 = 260$. Combining like terms on the left-hand side of this equation yields $x + 130 = 260$. Subtracting **130** from each side of this equation yields $x = 130$. Therefore, the value of x that's the solution to the given equation is **130**.

Question Difficulty: Easy

Question ID 556e4caa

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 556e4caa

3 more than 8 times a number x is equal to 83. Which equation represents this situation?

- A. $(3)(8)x = 83$
- B. $8x = 83 + 3$
- C. $3x + 8 = 83$
- D. $8x + 3 = 83$

ID: 556e4caa Answer

Correct Answer: D

Rationale

Choice D is correct. The given phrase “8 times a number x ” can be represented by the expression $8x$. The given phrase “3 more than” indicates an increase of 3 to a quantity. Therefore “3 more than 8 times a number x ” can be represented by the expression $8x + 3$. Since it’s given that 3 more than 8 times a number x is equal to 83, it follows that $8x + 3$ is equal to 83, or $8x + 3 = 83$. Therefore, the equation that represents this situation is $8x + 3 = 83$.

Choice A is incorrect. This equation represents 3 times the quantity 8 times a number x is equal to 83.

Choice B is incorrect. This equation represents 8 times a number x is equal to 3 more than 83.

Choice C is incorrect. This equation represents 8 more than 3 times a number x is equal to 83.

Question Difficulty: Easy

Question ID 7af4dc7f

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 7af4dc7f

$(p + 3) + 8 = 10$

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

- A. -1
- B. 5
- C. 15
- D. 21

ID: 7af4dc7f Answer

Correct Answer: A

Rationale

Choice A is correct. Subtracting 8 from both sides of the given equation yields $p + 3 = 2$. Subtracting 3 from both sides of this equation yields $p = -1$.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID c7eb4ad9

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: c7eb4ad9

If $4x + 2 = 12$, what is the value of $16x + 8$?

- A. 40
- B. 48
- C. 56
- D. 60

ID: c7eb4ad9 Answer

Correct Answer: B

Rationale

Choice B is correct. Multiplying both sides of the given equation by 4 yields $(4)(4x + 2) = (4)(12)$, or $16x + 8 = 48$. Therefore, the value of $16x + 8$ is 48.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID 3757bc97

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 3757bc97

Henry receives a **\$60.00** gift card to pay for movies online. He uses his gift card to buy **3** movies for **\$7.50** each. If he spends the rest of his gift card balance on renting movies for **\$1.50** each, how many movies can Henry rent?

- A. 10
- B. 25
- C. 35
- D. 40

ID: 3757bc97 Answer

Correct Answer: B

Rationale

Choice B is correct. It's given that Henry uses his **\$60.00** gift card to buy **3** movies for **\$7.50** each. Therefore, Henry spends **3(\$7.50)**, or **\$22.50**, of his **\$60.00** gift card to buy **3** movies. After buying **3** movies with his **\$60.00** gift card, Henry has a gift card balance of **\$60.00 — \$22.50**, or **\$37.50**. It's also given that Henry spends the rest of his gift card balance on renting movies for **\$1.50** each. Therefore, Henry can rent $\frac{\$37.50}{\$1.50}$, or **25**, movies.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID 149c8821

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 149c8821

$8x = 88$

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

- A. 11
- B. 80
- C. 96
- D. 704

ID: 149c8821 Answer

Correct Answer: A

Rationale

Choice A is correct. Dividing both sides of the given equation by 8 yields $x = 11$. Therefore, 11 is the solution to the given equation.

Choice B is incorrect. This is the solution to the equation $x + 8 = 88$.

Choice C is incorrect. This is the solution to the equation $x - 8 = 88$.

Choice D is incorrect. This is the solution to the equation $\frac{x}{8} = 88$.

Question Difficulty: Easy

Question ID 32112ba4

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 32112ba4

If $2x = 12$, what is the value of $9x$?

ID: 32112ba4 Answer

Correct Answer: 54

Rationale

The correct answer is **54**. Dividing both sides of the given equation by **2** yields $x = 6$. Multiplying both sides of this equation by **9** yields $9x = 54$. Thus, the value of $9x$ is **54**.

Question Difficulty: Easy

Question ID 017427ff

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 017427ff

On the first day of a semester, a film club has **90** members. Each day after the first day of the semester, **10** new members join the film club. If no members leave the film club, how many total members will the film club have **4** days after the first day of the semester?

- A. **400**
- B. **130**
- C. **94**
- D. **90**

ID: 017427ff Answer

Correct Answer: B

Rationale

Choice B is correct. It’s given that the film club has **90** members on the first day of a semester, and **10** new members join the film club each day after the first day of the semester. This means that after **4** days, 4×10 , or **40**, new members will have joined the club. Adding **40** members to the original **90** club members yields **130** members. Thus, the film club will have **130** total members **4** days after the first day of the semester.

Choice A is incorrect. This is the number of members that will have joined the film club **4** days after the first day of the semester if **100** new members, not **10**, join the film club each day.

Choice C is incorrect. This is the number of members the film club will have **4** days after the first day of the semester if **1** new member, not **10**, joins the film club each day.

Choice D is incorrect. This is the number of members the film club has on the first day of the semester.

Question Difficulty: Easy

Question ID b3ff677c

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: b3ff677c

A principal used a total of **25** flags that were either blue or yellow for field day. The principal used **20** blue flags. How many yellow flags were used?

- A. **5**
- B. **20**
- C. **25**
- D. **30**

ID: b3ff677c Answer

Correct Answer: A

Rationale

Choice A is correct. It's given that a principal used a total of **25** blue flags and yellow flags. It's also given that of the **25** flags used, **20** flags were blue. Subtracting the number of blue flags used from the total number of flags used results in the number of yellow flags used. It follows that the number of yellow flags used is **25 — 20**, or **5**.

Choice B is incorrect. This is the number of blue flags used.

Choice C is incorrect. This is the total number of flags used.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID 259ab62a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 259ab62a

If $6n = 12$, what is the value of $n + 4$?

ID: 259ab62a Answer

Correct Answer: 6

Rationale

The correct answer is **6**. Dividing both sides of the equation $6n = 12$ by **6** yields $n = 2$. Substituting **2** for n in the expression $n + 4$ yields $2 + 4$, or **6**.

Question Difficulty: Easy

Question ID 9eaba458

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 9eaba458

If $2x + 3 = 9$, what is the value of $6x - 1$?

ID: 9eaba458 Answer

Correct Answer: 17

Rationale

The correct answer is **17**. It's given that $2x + 3 = 9$. Multiplying each side of this equation by **3** yields $3(2x + 3) = 3(9)$, or $6x + 9 = 27$. Subtracting **10** from each side of this equation yields $6x + 9 - 10 = 27 - 10$, or $6x - 1 = 17$. Therefore, the value of $6x - 1$ is **17**.

Question Difficulty: Easy

Question ID 5602cce0

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 5602cce0

If $4x - 28 = -24$, what is the value of $x - 7$?

- A. -24
- B. -22
- C. -6
- D. -1

ID: 5602cce0 Answer

Correct Answer: C

Rationale

Choice C is correct. Dividing all terms in the given equation by 4 yields $\frac{4x}{4} - \frac{28}{4} = -\frac{24}{4}$, or $x - 7 = -6$. Therefore, the value of $x - 7$ is -6 .

Choice A is incorrect. This is the value of $4x - 28$, not $x - 7$.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID e4eb14ec

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: e4eb14ec

If $6 + x = 9$, what is the value of $18 + 3x$?

ID: e4eb14ec Answer

Correct Answer: 27

Rationale

The correct answer is **27**. Multiplying both sides of the given equation by **3** yields **$3(6 + x) = 3(9)$** , or **$18 + 3x = 27$** . Therefore, the value of **$18 + 3x$** is **27**.

Question Difficulty: Easy

Question ID 5ed72ba4

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 5ed72ba4

If $3x = 30$, what is the value of $3x - 12$?

- A. -2
- B. 18
- C. 22
- D. 42

ID: 5ed72ba4 Answer

Correct Answer: B

Rationale

Choice B is correct. Subtracting 12 from each side of the given equation yields $3x - 12 = 30 - 12$, or $3x - 12 = 18$. Therefore, the value of $3x - 12$ is 18 .

Choice A is incorrect. This is the value of $x - 12$, not $3x - 12$.

Choice C is incorrect. This is the value of $x + 12$, not $3x - 12$.

Choice D is incorrect. This is the value of $3x + 12$, not $3x - 12$.

Question Difficulty: Easy

Question ID 28857637

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 28857637

$4x + 6 = 18$

Which equation has the same solution as the given equation?

- A. $4x = 108$
- B. $4x = 24$
- C. $4x = 12$
- D. $4x = 3$

ID: 28857637 Answer

Correct Answer: C

Rationale

Choice C is correct. Subtracting **6** from both sides of the given equation yields **$4x = 12$** , which is the equation given in choice C. Since this equation is equivalent to the given equation, it has the same solution as the given equation.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy