

SPARK Hybrid Education Center

Mathematics & Geometry | Unit Test - September 2026 | Upper Level

Name: _____

Date: _____ Period: _____

Section 1: Multiple Choice (1 pt each)

1. Evaluate $3x - 5$ when $x = 4$.

- | | |
|-------|-------|
| A) 7 | B) 12 |
| C) 17 | D) -7 |

2. "5 less than twice n " as an expression:

- | | |
|-------------|--------------|
| A) $5 - 2n$ | B) $2n - 5$ |
| C) $2(n-5)$ | D) $n/2 - 5$ |

3. Simplify: $4a + 7 - 2a + 3$

- | | |
|--------------|--------------|
| A) $2a + 10$ | B) $6a + 10$ |
| C) $2a + 4$ | D) $4a + 4$ |

4. Solve: $x + 9 = 23$

- | | |
|--------------|--------------|
| A) $x = 14$ | B) $x = 32$ |
| C) $x = -14$ | D) $x = 207$ |

5. Solve: $3x = 42$

- | | |
|--------------|-------------|
| A) $x = 126$ | B) $x = 39$ |
| C) $x = 14$ | D) $x = 45$ |

6. Solve: $2x - 4 = 10$

- | | |
|-------------|------------|
| A) $x = 3$ | B) $x = 7$ |
| C) $x = 12$ | D) $x = 6$ |

7. " x is less than or equal to 6" as inequality:

- | | |
|---------------|---------------|
| A) $x < 6$ | B) $x > 6$ |
| C) $x \leq 6$ | D) $x \geq 6$ |

8. Solve $x/4 > 3$. Solution:

- | | |
|-------------|-------------|
| A) $x > 12$ | B) $x < 12$ |
| C) $x > 7$ | D) $x < 7$ |

9. Value of $2(x+5) - 3x$ when $x = 2$:

- | | |
|------|-------|
| A) 6 | B) -6 |
| C) 8 | D) 14 |

10. First step to solve $5x + 2 = 22$:

- | | |
|----------------|------------------|
| A) Divide by 5 | B) Subtract 2 |
| C) Add 2 | D) Multiply by 5 |

Section 2: Matching (1 pt each)

Match the expression (Column A) to its simplified form (Column B):

- | | |
|----------------------|-------------|
| ___ 1. $4x + 4x$ | A. $x + 5$ |
| ___ 2. $x - x$ | B. x^2 |
| ___ 3. $3(x+2)$ | C. 0 |
| ___ 4. $2x + 5 - x$ | D. $3x + 6$ |
| ___ 5. x times x | E. $8x$ |

Section 3: Show Your Work (3 pts each)

1. Evaluate $5a^2 - 2b$ when $a=3$ and $b=4$. Show each step.
2. Solve and check: $4x + 7 = 31$
3. Solve: $2(3x - 1) = 16$ (Distribute first)
4. Graph the solution to $x - 5 \leq 2$ on a number line.
5. Write an equation AND solve:
"A number doubled, then increased by 7, equals 23."

Section 4: Word Problems (4 pts each)

1. A plumber charges \$35 flat fee plus \$28/hr.
Bill was \$119. How many hours? Write and solve an equation.
2. Three friends split a restaurant bill equally; each paid \$14.75.
Write an equation to find the total bill.
3. You need at least 80 points to pass; you have 62.
Write an inequality for extra points needed.
Solve and interpret.

TEACHER COPY -- ANSWER KEY

Section 1 -- Multiple Choice

- 1-A
- 2-B
- 3-A
- 4-A
- 5-C
- 6-B
- 7-C
- 8-A
- 9-C
- 10-B

Section 2 -- Matching

- 1-E
- 2-C
- 3-D
- 4-A
- 5-B

Section 3 -- Show Your Work

- 1. $5(9) - 2(4) = 45 - 8 = 37$
- 2. $4x = 24$; $x = 6$; Check: $4(6)+7=31$ (correct)
- 3. $6x - 2 = 16$; $6x = 18$; $x = 3$
- 4. $x \leq 7$ (closed dot at 7, arrow pointing left)
- 5. $2n + 7 = 23$; $2n = 16$; $n = 8$

Section 4 -- Word Problems

- 1. $35 + 28h = 119$; $28h = 84$; $h = 3$ hours
- 2. Let $t = \text{total}$; $t/3 = 14.75$; $t = \$44.25$
- 3. $62 + p \geq 80$; $p \geq 18$ more points needed