

# Grade 6 algebra test

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|------|------|------------|
| NAME | DATE | SCORE / 12 |
|------|------|------------|

Answer each question. Show your work.

|                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>1</div> <div>If <math>n = 2</math>, what is <math>2n + 6</math>?</div> <div></div>                                                                                                                                                                                                                                                        | <div>2</div> <div>Write the factors of the term <math>8x</math> in <math>8x + 4n + 5</math>, a number and a letter.</div> <div></div>                                                                                                                                                                                                                                                                                                                                                    |
| <div>3</div> <div>Write <math>7(x + 12)</math> without parentheses.</div> <div></div>                                                                                                                                                                                                                                                          | <div>4</div> <div>Find the value of <math>4n^2</math> when <math>n = 2</math>.</div> <div></div>                                                                                                                                                                                                                                                                                                                                                                                         |
| <div>5</div> <div>Write <math>9 + 5x + 1 - x + 6x</math> with like terms collected.</div> <div></div>                                                                                                                                                                                                                                          | <div>6</div> <div>Solve for <math>x</math>: <math>x - \frac{1}{2} = \frac{1}{3}</math></div> <div></div>                                                                                                                                                                                                                                                                                                                                                                                 |
| <div>7</div> <div>Write an expression for "8 times the difference of a number <math>n</math> and 12".</div> <div></div>                                                                                                                                                                                                                        | <div>8</div> <div>Solve for <math>x</math>: <math>5x = 10</math></div> <div></div>                                                                                                                                                                                                                                                                                                                                                                                                       |
| <div>9</div> <div>Is <math>x = 7</math> a solution of <math>2x + 14 = 30</math>?</div> <div> <input type="radio"/> Yes, both sides equal 30           <input type="radio"/> No, the left side equals 28           <input type="radio"/> No, the left side equals 41           <input type="radio"/> No, the left side equals 42         </div> | <div>10</div> <div>Which property shows that <math>(9x + 2) + 8 = 9x + (2 + 8)</math>?</div> <div> <input type="radio"/> Commutative property of addition           <input type="radio"/> Associative property of multiplication           <input type="radio"/> Associative property of addition           <input type="radio"/> Commutative property of multiplication         </div>                                                                                                  |
| <div>11</div> <div>To win, Ben needs more than 38 votes. Let <math>v</math> be the number of votes Ben gets. Write an inequality that shows this.</div> <div></div>                                                                                                                                                                            | <div>12</div> <div>The letter <math>n</math> is used in two ways below.</div> <div>Rule: Pens cost \$4 each, so <math>n</math> pens cost <math>4n</math> dollars.</div> <div>Equation: <math>4n = 16</math></div> <div>In which one can <math>n</math> stand for many different numbers?</div> <div> <input type="radio"/> In the equation           <input type="radio"/> In neither           <input type="radio"/> In both           <input type="radio"/> In the rule         </div> |

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|    |                                  |    |            |    |                             |
|----|----------------------------------|----|------------|----|-----------------------------|
| 1  | 10                               | 2  | 8 and x    | 3  | $7x + 84$                   |
| 4  | 16                               | 5  | $10x + 10$ | 6  | $\frac{5}{6}$               |
| 7  | $8(n - 12)$                      | 8  | 2          | 9  | No, the left side equals 28 |
| 10 | Associative property of addition | 11 | $v > 38$   | 12 | In the rule                 |