

Algebra

Skill 4 - 3E

Expressions with Variables

Vocabulary - A variable is a letter used to represent a number.

Example

Find the value of $8 - n$ if $n = 3$

$8 - n$ ← $n = 3$ so, write the expression with the number 3 in place of n .	$\begin{array}{r} 8 - 3 \\ \downarrow \\ 5 \end{array}$
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So, the value of the expression is 5.

Directions: Find the value of each expression.

<p>1. Find the value of the expression if $n = 3$</p> $8 - n$ <p>The value of the expression is _____</p>	<p>2. Find the value of the expression if $y = 5$</p> $14 + y$ <p>The value of the expression is _____</p>
<p>3. Find the value of the expression if $n = 4$</p> $12 - n$ <p>The value of the expression is _____</p>	<p>4. Find the value of the expression if $y = 12$</p> $2 + y$ <p>The value of the expression is _____</p>
<p>5. Find the value of the expression if $n = 9$</p> $14 - n$ <p>The value of the expression is _____</p>	<p>6. Find the value of the expression if $y = 7$</p> $4 + y$ <p>The value of the expression is _____</p>

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Expressions

Find the value for each expression if $n = 3$. The first one is done as an example.

Example

9. $8 - n$ 8 - 3 5 10. $n + 7$ _____ _____

11. $5 - n$ _____ _____ 12. $n + 3$ _____ _____

13. $12 - n$ _____ _____ 14. $n + 15$ _____ _____

Find the value for each expression if $y = 5$

15. $10 - y$ _____ _____ 16. $y + 5$ _____ _____

17. $15 - y$ _____ _____ 18. $y + 7$ _____ _____

19. $18 - y$ _____ _____ 20. $y + 11$ _____ _____

Find the value for each expression if $p = 7$

21. $15 - p$ _____ _____ 22. $p + 4$ _____ _____

23. $8 - p$ _____ _____ 24. $p + 9$ _____ _____

25. $10 - p$ _____ _____ 26. $p + 6$ _____ _____

Find the value for each expression if $a = 5$

27. $10 - a$ _____ _____ 28. $a + 5$ _____ _____

29. $15 - a$ _____ _____ 30. $a + 7$ _____ _____

31. $18 - a$ _____ _____ 32. $a + 11$ _____ _____

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Expressions with Variables

Example

Find the value of $6 + (12 - n)$ if $n = 5$

<p>Step 1</p> $6 + (12 - n)$ <p>Replace the variable with 5.</p> <p style="text-align: center;">↓</p> $6 + (12 - 5)$	<p>Step 2</p> $6 + (12 - 5)$ <p>Subtract (remember, do the operation in parentheses first)</p> <p style="text-align: center;">↓</p> $6 + 7$
<p>Step 3</p> $6 + 7$ Add	<p>Step 4</p> <p>Write the answer.</p> <p>The value of the expression is 13.</p>

Directions: Find the value of each expression.

<p>33. Find the value of $10 + (7 - n)$ if $n = 2$</p> <p>The value of the expression is _____</p>	<p>34. Find the value of $12 + (n - 6)$ if $n = 8$</p> <p>The value of the expression is _____</p>
<p>35. Find the value of $9 + (5 - b)$ if $b = 4$</p> <p>The value of the expression is _____</p>	<p>36. Find the value of $(8 - b) + 6$ if $b = 3$</p> <p>The value of the expression is _____</p>
<p>37. Find the value of $(15 - b) + 4$ if $b = 5$</p> <p>The value of the expression is _____</p>	<p>38. Find the value of $8 + (24 - a)$ if $a = 12$</p> <p>The value of the expression is _____</p>

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Expressions with Variables

Directions: Find the value of each expression.

<p>39. Find the value of $14 + (10 - n)$ if $n = 8$</p> <p>The value of the expression is _____</p>	<p>40. Find the value of $(14 - b) + 3$ if $b = 5$</p> <p>The value of the expression is _____</p>
<p>41. Find the value of $9 + (5 - b)$ if $b = 4$</p> <p>The value of the expression is _____</p>	<p>42. Find the value of $(15 - b) + 8$ if $b = 12$</p> <p>The value of the expression is _____</p>
<p>43. Find the value of $(24 - b) + 8$ if $b = 14$</p> <p>The value of the expression is _____</p>	<p>44. Find the value of $6 + (18 - a)$ if $a = 6$</p> <p>The value of the expression is _____</p>
<p>45. Find the value of $b + (14 - 7)$ if $b = 4$</p> <p>The value of the expression is _____</p>	<p>46. Find the value of $(16 - b) + 5$ if $b = 7$</p> <p>The value of the expression is _____</p>
<p>47. Find the value of $(12 - c) + 8$ if $c = 4$</p> <p>The value of the expression is _____</p>	<p>48. Find the value of $9 + (18 - a)$ if $a = 6$</p> <p>The value of the expression is _____</p>

Answer Key
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Directions: Find the value of each expression.

1. 5 2. 19 3. 8 4. 14 5. 5 6. 11

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Find the value for each expression if $n = 3$. The first one is done as an example.

- | | | | | | |
|---------------------|---------------|----------|---------------------|---------------|-----------|
| 9. $8 - n$ | <u>8 - 3</u> | <u>5</u> | 10. $n + 7$ | <u>3 + 7</u> | <u>10</u> |
| 11. $5 - n$ | <u>5 - 3</u> | <u>2</u> | 12. $n + 3$ | <u>3 + 3</u> | <u>6</u> |
| 13. $12 - n$ | <u>12 - 3</u> | <u>9</u> | 14. $n + 15$ | <u>3 + 15</u> | <u>18</u> |

Find the value for each expression if $y = 5$

- | | | | | | |
|---------------------|---------------|-----------|---------------------|---------------|-----------|
| 15. $10 - y$ | <u>10 - 5</u> | <u>5</u> | 16. $y + 5$ | <u>5 + 5</u> | <u>10</u> |
| 17. $15 - y$ | <u>15 - 5</u> | <u>10</u> | 18. $y + 7$ | <u>5 + 7</u> | <u>12</u> |
| 19. $18 - y$ | <u>18 - 5</u> | <u>13</u> | 20. $y + 11$ | <u>5 + 11</u> | <u>16</u> |

Find the value for each expression if $p = 7$

- | | | | | | |
|---------------------|---------------|----------|--------------------|--------------|-----------|
| 21. $15 - p$ | <u>15 - 7</u> | <u>8</u> | 22. $p + 4$ | <u>7 + 4</u> | <u>11</u> |
| 23. $8 - p$ | <u>8 - 7</u> | <u>1</u> | 24. $p + 9$ | <u>7 + 9</u> | <u>16</u> |
| 25. $10 - p$ | <u>10 - 7</u> | <u>3</u> | 26. $p + 6$ | <u>7 + 6</u> | <u>13</u> |

Find the value for each expression if $a = 5$

- | | | | | | |
|---------------------|---------------|-----------|---------------------|---------------|-----------|
| 27. $10 - a$ | <u>10 - 5</u> | <u>5</u> | 28. $a + 5$ | <u>5 + 5</u> | <u>10</u> |
| 29. $15 - a$ | <u>15 - 5</u> | <u>10</u> | 30. $a + 7$ | <u>5 + 7</u> | <u>12</u> |
| 31. $18 - a$ | <u>18 - 5</u> | <u>13</u> | 32. $a + 11$ | <u>5 + 11</u> | <u>16</u> |

Pg 3 Directions: Find the value of each expression.

<p>33. Find the value of $10 + (7 - n)$ if $n = 2$</p> <p style="text-align: center;">$10 + (7 - 2)$ $10 + 5$</p> <p style="text-align: center;">The value of the expression is <u>15</u></p>	<p>34. Find the value of $12 + (n - 6)$ if $n = 8$</p> <p style="text-align: center;">$12 + (8 - 6)$ $12 + 2$</p> <p style="text-align: center;">The value of the expression is <u>14</u></p>
<p>35. Find the value of $9 + (5 - b)$ if $b = 4$</p> <p style="text-align: center;">$9 + (5 - 4)$ $9 + 1$</p> <p style="text-align: center;">The value of the expression is <u>10</u></p>	<p>36. Find the value of $(8 - b) + 6$ if $b = 3$</p> <p style="text-align: center;">$(8 - 3) + 6$ $5 + 6$</p> <p style="text-align: center;">The value of the expression is <u>11</u></p>
<p>37. Find the value of $(15 - b) + 4$ if $b = 5$</p> <p style="text-align: center;">$(15 - 5) + 4$ $10 + 4$</p> <p style="text-align: center;">The value of the expression is <u>14</u></p>	<p>38. Find the value of $8 + (24 - a)$ if $a = 12$</p> <p style="text-align: center;">$8 + (24 - 12)$ $8 + 12$</p> <p style="text-align: center;">The value of the expression is <u>20</u></p>

Answer Key
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Directions: Find the value of each expression.

<p>39. Find the value of $14 + (10 - n)$ if $n = 8$</p> $14 + (10 - 8)$ $14 + 2$ <p>The value of the expression is <u>16</u></p>	<p>40. Find the value of $(14 - b) + 3$ if $b = 5$</p> $(14 - 5) + 3$ $9 + 3$ <p>The value of the expression is <u>12</u></p>
<p>41. Find the value of $9 + (5 - b)$ if $b = 4$</p> $9 + (5 - 4)$ $9 + 1$ <p>The value of the expression is 10</p>	<p>42. Find the value of $(15 - b) + 8$ if $b = 12$</p> $(15 - 12) + 8$ $3 + 8$ <p>The value of the expression is 11</p>
<p>43. Find the value of $(24 - b) + 8$ if $b = 14$</p> $(24 - 14) + 8$ $10 + 8$ <p>The value of the expression is 18</p>	<p>44. Find the value of $6 + (18 - a)$ if $a = 6$</p> $6 + (18 - 6)$ $6 + 12$ <p>The value of the expression is 18</p>
<p>45. Find the value of $b + (14 - 7)$ if $b = 4$</p> $4 + (14 - 7)$ $4 + 7$ <p>The value of the expression is 11</p>	<p>46. Find the value of $(16 - b) + 5$ if $b = 7$</p> $(16 - 7) + 5$ $9 + 5$ <p>The value of the expression is 14</p>
<p>47. Find the value of $(12 - c) + 8$ if $c = 4$</p> $(12 - 4) + 8$ $8 + 8$ <p>The value of the expression is 16</p>	<p>48. Find the value of $9 + (18 - a)$ if $a = 6$</p> $9 + (18 - 6)$ $9 + 12$ <p>The value of the expression is 21</p>