## Section 3.1

1. $8n$
2. $2z$
3. $6(n+3)$
4. $10(n+8)$
5. $4b$
6. $4y$
7. $y-33$
8. $u-30$
9. $10n$
10. $10z$
11. $9(z+2)$
12. $14(n+10)$
13. $2y$
14. $4n$
15. $15p+13$
16. $5y-14$
17. $11x-4$
18. $5p-13$
19. $u-10$
20. $w+32$
21. \(12b\)

22. \(s = 2m\) or \(m = \frac{1}{2}s\)

23. a) \(4d\)
    b) \(60n\)
    c) \(24d\)
    d) \(365y\)
    e) \(12y\)
    f) \(12f\)
    g) \(3y\)
**Section 3.2**

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
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<td>3.</td>
<td>–24</td>
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<td>5.</td>
<td>7</td>
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<tr>
<td>7.</td>
<td>13</td>
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<td>9.</td>
<td>138</td>
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<td>17.</td>
<td>–2</td>
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<td>19.</td>
<td>1</td>
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<td>28.</td>
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<td>31.</td>
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<td>32.</td>
<td>4</td>
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<td>33.</td>
<td>1</td>
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<td>34.</td>
<td>–8</td>
</tr>
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<td>35.</td>
<td>5</td>
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<td>36.</td>
<td>3</td>
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<td>37.</td>
<td>46</td>
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<tr>
<td>38.</td>
<td>66</td>
</tr>
<tr>
<td>39.</td>
<td>–29</td>
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<tr>
<td>40.</td>
<td>–24</td>
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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>41.</td>
<td>( d = 256 \text{ ft} )</td>
</tr>
<tr>
<td>42.</td>
<td>( d = 9216 \text{ ft} )</td>
</tr>
<tr>
<td>43.</td>
<td>110(^\circ)C</td>
</tr>
<tr>
<td>44.</td>
<td>35(^\circ)C</td>
</tr>
<tr>
<td>45.</td>
<td>–409(^\circ)F</td>
</tr>
<tr>
<td>46.</td>
<td>–13(^\circ)F</td>
</tr>
<tr>
<td>47.</td>
<td>80 ft / s</td>
</tr>
<tr>
<td>48.</td>
<td>342 ft / s</td>
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<tr>
<td>49. a)</td>
<td>2</td>
</tr>
<tr>
<td>b)</td>
<td>4</td>
</tr>
<tr>
<td>c)</td>
<td>6</td>
</tr>
<tr>
<td>d)</td>
<td>–8</td>
</tr>
<tr>
<td>e)</td>
<td>–10</td>
</tr>
<tr>
<td>f)</td>
<td>Yes. Multiplying by two always yields an even number.</td>
</tr>
<tr>
<td>50. a)</td>
<td>3</td>
</tr>
<tr>
<td>b)</td>
<td>5</td>
</tr>
<tr>
<td>c)</td>
<td>7</td>
</tr>
<tr>
<td>d)</td>
<td>–7</td>
</tr>
<tr>
<td>e)</td>
<td>–9</td>
</tr>
<tr>
<td>f)</td>
<td>Yes. An even number plus one is always odd.</td>
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### Section 3.3

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<tr>
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<tr>
<td>2</td>
<td>$-56x$</td>
</tr>
<tr>
<td>3</td>
<td>$30x$</td>
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<tr>
<td>4</td>
<td>$40x$</td>
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<tr>
<td>5</td>
<td>$-15x$</td>
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<tr>
<td>6</td>
<td>$54x$</td>
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<td>7</td>
<td>$-40x$</td>
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<td>8</td>
<td>$60x$</td>
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<td>9</td>
<td>$15x$</td>
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<td>10</td>
<td>$9x$</td>
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<td>11</td>
<td>$50x$</td>
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<td>12</td>
<td>$20x$</td>
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<td>13</td>
<td>$63x$</td>
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<td>14</td>
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<td>$12x$</td>
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<td>17</td>
<td>$72x$</td>
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<td>18</td>
<td>$-9x$</td>
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<td>19</td>
<td>$42x$</td>
</tr>
<tr>
<td>20</td>
<td>$40x$</td>
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</tr>
<tr>
<td>21.</td>
<td>$56x + 64$</td>
</tr>
<tr>
<td>22.</td>
<td>$-10x - 10$</td>
</tr>
<tr>
<td>23.</td>
<td>$-18x + 90x$</td>
</tr>
<tr>
<td>24.</td>
<td>$-36 - 81x$</td>
</tr>
<tr>
<td>25.</td>
<td>$2x - 10y + 6$</td>
</tr>
<tr>
<td>26.</td>
<td>$6y - 9x + 7$</td>
</tr>
<tr>
<td>27.</td>
<td>$20 + 2x$</td>
</tr>
<tr>
<td>28.</td>
<td>$20 - 12x$</td>
</tr>
<tr>
<td>29.</td>
<td>$9 + 12x$</td>
</tr>
<tr>
<td>30.</td>
<td>$12 + 18x$</td>
</tr>
<tr>
<td>31.</td>
<td>$5 + 7x - 2y$</td>
</tr>
<tr>
<td>32.</td>
<td>$-4x + 8 + 7y$</td>
</tr>
<tr>
<td>33.</td>
<td>$-24x + 28$</td>
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<tr>
<td>34.</td>
<td>$24x + 54$</td>
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<td>35.</td>
<td>$32x - 36$</td>
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<td>36.</td>
<td>$-100x + 10$</td>
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<td>37.</td>
<td>$-4 + 2x + 10y$</td>
</tr>
<tr>
<td>38.</td>
<td>$4x - 6 + 8y$</td>
</tr>
<tr>
<td>39.</td>
<td>$5x - 1 - 9y$</td>
</tr>
<tr>
<td>40.</td>
<td>$10 + 5x + 4y$</td>
</tr>
<tr>
<td>41.</td>
<td>$-6x - 2 + 10y$</td>
</tr>
<tr>
<td>42.</td>
<td>$-6x - 4 + 10y$</td>
</tr>
<tr>
<td>43.</td>
<td>$3y + 4 - 4x$</td>
</tr>
<tr>
<td>44.</td>
<td>$7 + 10x - 7y$</td>
</tr>
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</tr>
<tr>
<td><strong>Section 3.4</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1.</strong></td>
<td>55$xy^2$</td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>11$xy$</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>$-21xy^2$</td>
</tr>
<tr>
<td><strong>4.</strong></td>
<td>$-4xy$</td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>$-16xy$</td>
</tr>
<tr>
<td><strong>6.</strong></td>
<td>$8y^3$</td>
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<td><strong>7.</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>8.</strong></td>
<td>$11s$</td>
</tr>
<tr>
<td><strong>9.</strong></td>
<td>$-16x$</td>
</tr>
<tr>
<td><strong>10.</strong></td>
<td>$-16r$</td>
</tr>
<tr>
<td><strong>11.</strong></td>
<td>$2q$</td>
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<td><strong>12.</strong></td>
<td>$32n$</td>
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<td><strong>13.</strong></td>
<td>$-19r$</td>
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<td><strong>14.</strong></td>
<td>$35m$</td>
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<td><strong>15.</strong></td>
<td>$-15x^3$</td>
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<tr>
<td><strong>16.</strong></td>
<td>$5x^2y$</td>
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</table>
In Exercises 17-32, combine like terms by first rearranging the terms, then using the distributive property to factor out the common variable part, and then simplifying.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Expression</th>
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<tbody>
<tr>
<td>17</td>
<td>25n + 2</td>
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<tr>
<td>18</td>
<td>10s - 3</td>
</tr>
<tr>
<td>19</td>
<td>-34x^2 y + 9x^3</td>
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<td>20</td>
<td>8x^2 y - 20y^3</td>
</tr>
<tr>
<td>21</td>
<td>-18xy - 4x^3</td>
</tr>
<tr>
<td>22</td>
<td>-16x^3 + 16xy</td>
</tr>
<tr>
<td>23</td>
<td>17m + 3</td>
</tr>
<tr>
<td>24</td>
<td>-19x + 24</td>
</tr>
<tr>
<td>25</td>
<td>-6x^2 y + 16xy^2</td>
</tr>
<tr>
<td>26</td>
<td>-24y^2 + y^3</td>
</tr>
<tr>
<td>27</td>
<td>-9x^3 + 24xy</td>
</tr>
<tr>
<td>28</td>
<td>-9xy + 33y^2</td>
</tr>
<tr>
<td>29</td>
<td>24n + 17</td>
</tr>
<tr>
<td>30</td>
<td>5r + 22</td>
</tr>
<tr>
<td>31</td>
<td>9y + 4</td>
</tr>
<tr>
<td>32</td>
<td>27p + 19</td>
</tr>
</tbody>
</table>
In Exercises 33-56, simplify the expression by first using the distributive property to expand the expression, and then rearranging and combining like terms mentally.

33. \(24x^2y - 68\)

34. \(-14xy - 74y^3\)

35. \(-22x^2 + 70y^2\)

36. \(98x^3 + 28x^2\)

37. \(2s + 8\)

38. \(20y + 4\)

39. \(-7q - 15\)

40. \(-9n + 11\)

41. \(98y + 1\)

42. \(-6n - 3\)

43. \(7x^2 - 119xy^2\)

44. \(86x^2y - 76xy^2\)

45. \(-12n - 40\)

46. \(-9m + 47\)

47. \(4 - 8y\)

48. \(-9 - s\)

49. \(48n - 62\)

50. \(18r - 15\)

51. \(-10p - 10\)

52. \(-2p + 7\)

53. \(39r + 15\)
54. $49s + 95$
55. $16x^2 - 26$
56. $115y^2 + 59x^3$

57. $P = 14W + 6$
58. $P = 14W + 14$
59. $P = 4L - 16$
60. $P = 4L - 18$
61. $P = 10W - 18$
62. $P = 14W - 4$
### Section 3.5

1. $x = 1$
2. $x = 3$
3. $x = 4$
4. $x = -3$
5. $x = -5$
6. $x = 1$
7. $x = 0$
8. $x = 3$
9. $x = 1$
10. $x = 71$
11. $x = -2$
12. $x = 30$
13. $x = -5$
14. $x = 1$
15. $x = 1$
16. $x = 1$

---

In Exercises 17-34, solve the equation.

17. $x = 9$
18. $x = 1$
19. $x = 7$
20. $x = -1$
21. $x = -2$
22. $x = 0$
23. $x = 1$
24. $x = 12$
25. $x = -3$
26. $x = 6$
27. $x = -1$
28. $x = 1$
29. $x = 2$
30. $x = 9$
31. $x = -2$
32. $x = -4$
33. $x = -2$
34. $x = 11
In Exercises 35-52, solve the equation.

35. \( x = 6 \) \hspace{1cm} 36. \( x = 6 \)
37. \( x = 50 \) \hspace{1cm} 38. \( x = 10 \)
39. \( x = 0 \) \hspace{1cm} 40. \( x = -3 \)
41. \( x = -2 \) \hspace{1cm} 42. \( x = -2 \)
43. \( x = 7 \) \hspace{1cm} 44. \( x = 0 \)
45. \( x = -3 \) \hspace{1cm} 46. \( x = 0 \)
47. \( x = 3 \) \hspace{1cm} 48. \( x = -7 \)
49. \( x = -1 \) \hspace{1cm} 50. \( x = -5 \)
51. \( x = 0 \) \hspace{1cm} 52. \( x = 0 \)

In Exercises 53-68, solve the equation.

53. \( x = 33 \) \hspace{1cm} 54. \( x = -33 \)
55. \( x = 3 \) \hspace{1cm} 56. \( x = 0 \)
57. \( x = -23 \) \hspace{1cm} 58. \( x = -7 \)
59. \( x = 21 \) \hspace{1cm} 60. \( x = 4 \)
61. \( x = -12 \) \hspace{1cm} 62. \( x = -2 \)
63. \( x = 1 \) \hspace{1cm} 64. \( x = 26 \)
65. \( x = -2 \) \hspace{1cm} 66. \( x = -3 \)
67. \( x = 0 \) \hspace{1cm} 68. \( x = 11 \)
Section 3.6

Use the Five Step Word Problem Method to solve the following problems.

1. The three sides of a triangle are consecutive odd integers. If the perimeter of the triangle is 39 inches, find the lengths of the sides of the triangle.

   1) Identify a variable. \( x = \) the length of one of the sides of the triangle
   2) Write an equation. \( x + (x + 2) + (x + 4) = 39 \)
   3) Solve the equation.
   4) State your answer. \( 1\)st side = 11 inches, \( 2\)nd side = 13 inches, \( 3\)rd side = 15 inches
   5) Check your answer. Does the answer makes sense? Yes!
      Did you answer what the problem is asking for? Yes!

2. The three sides of a triangle are consecutive odd integers. If the perimeter of the triangle is 51 inches, find the lengths of the sides of the triangle.

   1) Identify a variable. \( x = \) the length of one of the sides of the triangle
   2) Write an equation. \( x + (x + 2) + (x + 4) = 51 \)
   3) Solve the equation.
   4) State your answer. \( 1\)st side = 15 inches, \( 2\)nd side = 17 inches, \( 3\)rd side = 19 inches
   5) Check your answer. Does the answer makes sense? Yes!
      Did you answer what the problem is asking for? Yes!

3. The width and length of a rectangle are consecutive integers. If the perimeter of the rectangle is 142 inches, find the width and length of the rectangle.

   1) Identify a variable. \( W = \) the width of the rectangle
   2) Write an equation. \( 2W + 2(W + 1) = 142 \)
   3) Solve the equation.
   4) State your answer. Width = 35 inches, Length = 36 inches
   5) Check your answer. Does the answer makes sense? Yes!
Did you answer what the problem is asking for? Yes!

4. The width and length of a rectangle are consecutive integers. If the perimeter of the rectangle is 166 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle
2) Write an equation. \( 2W + 2(W + 1) = 166 \)
3) Solve the equation.
4) State your answer. \( \text{Width} = 41 \text{ inches}, \text{Length} = 42 \text{ inches} \)
5) Check your answer. Does the answer makes sense? Yes!

Did you answer what the problem is asking for? Yes!

5. The three sides of a triangle are consecutive even integers. If the perimeter of the triangle is 240 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( n = \) the length of one of the sides of the triangle
2) Write an equation. \( n + (n + 2) + (n + 4) = 240 \)
3) Solve the equation.
4) State your answer. \( 1^{\text{st}} \text{ side} = 78 \text{ inches}, 2^{\text{nd}} \text{ side} = 80 \text{ inches}, 3^{\text{rd}} \text{ side} = 82 \text{ inches} \)
5) Check your answer. Does the answer makes sense? Yes!

Did you answer what the problem is asking for? Yes!

6. The three sides of a triangle are consecutive even integers. If the perimeter of the triangle is 30 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( n = \) the length of one of the sides of the triangle
2) Write an equation. \( n + (n + 2) + (n + 4) = 30 \)
3) Solve the equation.
4) State your answer. \( 1^{\text{st}} \text{ side} = 8 \text{ inches}, 2^{\text{nd}} \text{ side} = 10 \text{ inches}, 3^{\text{rd}} \text{ side} = 12 \text{ inches} \)
5) Check your answer. Does the answer makes sense? Yes!

Did you answer what the problem is asking for? Yes!
7. The width and length of a rectangle are consecutive integers. If the perimeter of the rectangle is 374 inches, find the width and length of the rectangle.

1) Identify a variable. \[ W = \text{the width of the rectangle} \]

2) Write an equation. \[ 2W + 2(W + 1) = 374 \]

3) Solve the equation.

4) State your answer. \[ \text{Width} = 93 \text{ inches, Length} = 94 \text{ inches} \]

5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!

8. The width and length of a rectangle are consecutive integers. If the perimeter of the rectangle is 318 inches, find the width and length of the rectangle.

1) Identify a variable. \[ W = \text{the width of the rectangle} \]

2) Write an equation. \[ 2W + 2(W + 1) = 318 \]

3) Solve the equation.

4) State your answer. \[ \text{Width} = 79 \text{ inches, Length} = 80 \text{ inches} \]

5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!

9. The width and length of a rectangle are consecutive odd integers. If the perimeter of the rectangle is 208 inches, find the width and length of the rectangle.

1) Identify a variable. \[ W = \text{the width of the rectangle} \]

2) Write an equation. \[ 2W + 2(W + 2) = 208 \]

3) Solve the equation.

4) State your answer. \[ \text{Width} = 51 \text{ inches, Length} = 53 \text{ inches} \]

5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!
10. The width and length of a rectangle are consecutive odd integers. If the perimeter of the rectangle is 152 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle
2) Write an equation. \( 2W + 2(W + 2) = 152 \)
3) Solve the equation.
4) State your answer. \( \text{Width} = 37 \text{ inches, Length} = 39 \text{ inches} \)
5) Check your answer. Does the answer makes sense? Yes!
   Did you answer what the problem is asking for? Yes!

11. The width and length of a rectangle are consecutive even integers. If the perimeter of the rectangle is 76 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle
2) Write an equation. \( 2W + 2(W + 2) = 76 \)
3) Solve the equation.
4) State your answer. \( \text{Width} = 18 \text{ inches, Length} = 20 \text{ inches} \)
5) Check your answer. Does the answer makes sense? Yes!
   Did you answer what the problem is asking for? Yes!

12. The width and length of a rectangle are consecutive even integers. If the perimeter of the rectangle is 300 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle
2) Write an equation. \( 2W + 2(W + 2) = 300 \)
3) Solve the equation.
4) State your answer. \( \text{Width} = 74 \text{ inches, Length} = 76 \text{ inches} \)
5) Check your answer. Does the answer makes sense? Yes!
   Did you answer what the problem is asking for? Yes!
13. The three sides of a triangle are consecutive even integers. If the perimeter of the triangle is 144 inches, find the lengths of the sides of the triangle.

   1) Identify a variable. \(x = \) the length of one of the sides of the triangle
   2) Write an equation. \(x + (x + 2) + (x + 4) = 144\)
   3) Solve the equation.
   4) State your answer. 1st side = 46 inches, 2nd side = 48 inches, 3rd side = 50 inches
   5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!

14. The three sides of a triangle are consecutive even integers. If the perimeter of the triangle is 198 inches, find the lengths of the sides of the triangle.

   1) Identify a variable. \(n = \) the length of one of the sides of the triangle
   2) Write an equation. \(n + (n + 2) + (n + 4) = 198\)
   3) Solve the equation.
   4) State your answer. 1st side = 64 inches, 2nd side = 66 inches, 3rd side = 68 inches
   5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!

15. The three sides of a triangle are consecutive integers. If the perimeter of the triangle is 228 inches, find the lengths of the sides of the triangle.

   1) Identify a variable. \(x = \) the length of one of the sides of the triangle
   2) Write an equation. \(x + (x + 1) + (x + 2) = 228\)
   3) Solve the equation.
   4) State your answer. 1st side = 75 inches, 2nd side = 76 inches, 3rd side = 77 inches
   5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!
16. The three sides of a triangle are consecutive integers. If the perimeter of the triangle is 216 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( x = \) the length of one of the sides of the triangle

2) Write an equation. \( x + (x + 1) + (x + 2) = 216 \)

3) Solve the equation.

4) State your answer. \( 1^{st} \) side = 71 inches, \( 2^{nd} \) side = 72 inches, \( 3^{rd} \) side = 73 inches

5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!

17. The width and length of a rectangle are consecutive even integers. If the perimeter of the rectangle is 92 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle

2) Write an equation. \( 2W + 2(W + 2) = 92 \)

3) Solve the equation.

4) State your answer. Width = 22 inches, Length = 24 inches

5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!

18. The width and length of a rectangle are consecutive even integers. If the perimeter of the rectangle is 228 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle

2) Write an equation. \( 2W + 2(W + 2) = 228 \)

3) Solve the equation.

4) State your answer. Width = 56 inches, Length = 58 inches

5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!
19. The three sides of a triangle are consecutive odd integers. If the perimeter of the triangle is 105 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( n = \) the length of one of the sides of the triangle

2) Write an equation. \( n + (n + 2) + (n + 4) = 105 \)

3) Solve the equation.

4) State your answer. 1\textsuperscript{st} side = 33 inches, 2\textsuperscript{nd} side = 35 inches, 3\textsuperscript{rd} side = 37 inches

5) Check your answer. Does the answer makes sense? Yes!
Did you answer what the problem is asking for? Yes!

20. The three sides of a triangle are consecutive integers. If the perimeter of the triangle is 123 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( x = \) the length of one of the sides of the triangle

2) Write an equation. \( x + (x + 1) + (x + 2) = 123 \)

3) Solve the equation.

4) State your answer. 1\textsuperscript{st} side = 40 inches, 2\textsuperscript{nd} side = 41 inches, 3\textsuperscript{rd} side = 42 inches

5) Check your answer. Does the answer makes sense? Yes!
Did you answer what the problem is asking for? Yes!

21. The width and length of a rectangle are consecutive odd integers. If the perimeter of the rectangle is 288 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle

2) Write an equation. \( 2W + 2(W + 2) = 288 \)

3) Solve the equation.

4) State your answer. Width = 71 inches, Length = 73 inches

5) Check your answer. Does the answer makes sense? Yes!
Did you answer what the problem is asking for? Yes!
22. The width and length of a rectangle are consecutive odd integers. If the perimeter of the rectangle is 352 inches, find the width and length of the rectangle.

1) Identify a variable. \( W = \) the width of the rectangle

2) Write an equation. \( 2W + 2(W + 2) = 352 \)

3) Solve the equation.

4) State your answer. \( \text{Width} = 87 \) inches, \( \text{Length} = 89 \) inches

5) Check your answer. Does the answer makes sense? Yes!
   Did you answer what the problem is asking for? Yes!

23. The three sides of a triangle are consecutive odd integers. If the perimeter of the triangle is 165 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( x = \) the length of one of the sides of the triangle

2) Write an equation. \( x + (x + 2) + (x + 4) = 165 \)

3) Solve the equation.

4) State your answer. \( 1^{\text{st}} \text{ side} = 53 \) inches, \( 2^{\text{nd}} \text{ side} = 55 \) inches, \( 3^{\text{rd}} \text{ side} = 57 \) inches

5) Check your answer. Does the answer makes sense? Yes!
   Did you answer what the problem is asking for? Yes!

24. The three sides of a triangle are consecutive odd integers. If the perimeter of the triangle is 99 inches, find the lengths of the sides of the triangle.

1) Identify a variable. \( n = \) the length of one of the sides of the triangle

2) Write an equation. \( x + (x + 2) + (x + 4) = 99 \)

3) Solve the equation.

4) State your answer. \( 1^{\text{st}} \text{ side} = 31 \) inches, \( 2^{\text{nd}} \text{ side} = 33 \) inches, \( 3^{\text{rd}} \text{ side} = 35 \) inches

5) Check your answer. Does the answer makes sense? Yes!
   Did you answer what the problem is asking for? Yes!
25. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 8 children must be accompanied by one adult guardian. Hence, the organization orders 8 times as many child tickets as it does adult tickets. Child tickets are $7 and adult tickets are $19. If the total cost of tickets is $975, how many adult tickets were purchased?

1) Identify a variable. \( A = \) number of adult tickets purchased

2) Write an equation. \( 19A + 7(8A) = 975 \)

3) Solve the equation.

4) State your answer. 13 adult tickets

5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!

26. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 2 children must be accompanied by one adult guardian. Hence, the organization orders 2 times as many child tickets as it does adult tickets. Child tickets are $6 and adult tickets are $16. If the total cost of tickets is $532, how many adult tickets were purchased?

1) Identify a variable. \( A = \) number of adult tickets purchased

2) Write an equation. \( 16A + 6(2A) = 532 \)

3) Solve the equation.

4) State your answer. 19 adult tickets

5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!

27. Judah cracks open a piggy bank and finds $3.30, all in nickels and dimes. There are 15 more dimes than nickels. How many nickels does Judah have?

1) Identify a variable. \( n = \) nickels

2) Write an equation. \( .05n + .10(n + 15) = 3.30 \)

3) Solve the equation.

4) State your answer. 12 nickels

5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!
28. Texas cracks open a piggy bank and finds $4.90, all in nickels and dimes. There are 13 more dimes than nickels. How many nickels does Texas have?

1) Identify a variable. 
   
   \( n = \) nickels 

2) Write an equation. 
   
   \[ .05n+.10(n + 13) = 4.90 \]

3) Solve the equation.

4) State your answer. 
   
   22 nickels

5) Check your answer. Does the answer make sense? Yes! 
   Did you answer what the problem is asking for? Yes! 

29. Steve cracks open a piggy bank and finds $4.00, all in nickels and dimes. There are 7 more dimes than nickels. How many nickels does Steve have? 

1) Identify a variable. 
   
   \( n = \) nickels 

2) Write an equation. 
   
   \[ .05n + .10(n + 7) = 4.00 \]

3) Solve the equation.

4) State your answer. 
   
   22 nickels

5) Check your answer. Does the answer make sense? Yes! 
   Did you answer what the problem is asking for? Yes! 

30. Liz cracks open a piggy bank and finds $4.50, all in nickels and dimes. There are 15 more dimes than nickels. How many nickels does Liz have? 

1) Identify a variable. 
   
   \( n = \) nickels 

2) Write an equation. 
   
   \[ .05n +.10(n + 15) = 4.50 \]

3) Solve the equation.

4) State your answer. 
   
   20 nickels

5) Check your answer. Does the answer make sense? Yes! 
   Did you answer what the problem is asking for? Yes!
31. Jason inherits $20,300 and decides to invest in two different types of accounts, a savings account paying 2.5% interest, and a certificate of deposit paying 5% interest. He decides to invest $7,300 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

   1) Identify a variable. \( x = \text{amount invested in savings account} \)
   2) Write an equation. \( x + (x + 7300) = 20,300 \)
   3) Solve the equation.
   4) State your answer. $6,500 was invested into the savings account
   5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!

32. Trinity inherits $24,300 and decides to invest in two different types of accounts, a savings account paying 2% interest, and a certificate of deposit paying 5.75% interest. She decides to invest $8,500 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

   1) Identify a variable. \( x = \text{amount invested in savings account} \)
   2) Write an equation. \( x + (x + 8500) = 24,300 \)
   3) Solve the equation.
   4) State your answer. $7900 was invested into the savings account
   5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!

33. Gina cracks open a piggy bank and finds $4.50, all in nickels and dimes. There are 15 more dimes than nickels. How many nickels does Gina have?

   1) Identify a variable. \( n = \text{nickels} \)
   2) Write an equation. \(.05n + .10(n + 15) = 4.50\)
   3) Solve the equation.
   4) State your answer. 20 nickels
   5) Check your answer. Does the answer makes sense? Yes! Did you answer what the problem is asking for? Yes!
34. Dylan cracks open a piggy bank and finds $4.05, all in nickels and dimes. There are 6 more dimes than nickels. How many nickels does Dylan have?

1) Identify a variable.  
\( n = \text{nickels} \)

2) Write an equation.  
\( 0.05n + 0.10(n + 6) = 4.05 \)

3) Solve the equation.

4) State your answer.  
\( n = 23 \text{ nickels} \)

5) Check your answer. Does the answer make sense? Yes!
   Did you answer what the problem is asking for? Yes!

35. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 2 children must be accompanied by one adult guardian. Hence, the organization orders 2 times as many child tickets as it does adult tickets. Child tickets are $4 and adult tickets are $10. If the total cost of tickets is $216, how many adult tickets were purchased?

1) Identify a variable.  
\( A = \text{adult tickets} \)

2) Write an equation.  
\( 10A + 4(2A) = 216 \)

3) Solve the equation.

4) State your answer.  
\( A = 12 \text{ adult tickets} \)

5) Check your answer. Does the answer make sense? Yes!
   Did you answer what the problem is asking for? Yes!

36. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 2 children must be accompanied by one adult guardian. Hence, the organization orders 2 times as many child tickets as it does adult tickets. Child tickets are $7 and adult tickets are $11. If the total cost of tickets is $375, how many adult tickets were purchased?

1) Identify a variable.  
\( A = \text{adult tickets} \)

2) Write an equation.  
\( 11A + 7(2A) = 375 \)

3) Solve the equation.

4) State your answer.  
\( A = 15 \text{ adult tickets} \)

5) Check your answer. Does the answer make sense? Yes!
   Did you answer what the problem is asking for? Yes!
37. Connie cracks open a piggy bank and finds $3.70, all in nickels and dimes. There are 7 more dimes than nickels. How many nickels does Connie have?

1) Identify a variable.  
   \[ n = \text{nickels} \]

2) Write an equation.  
   \[ .05n + .10(n + 7) = 3.70 \]

3) Solve the equation.

4) State your answer.  
   \[ 20 \text{ nickels} \]

5) Check your answer. Does the answer makes sense? Yes!  
   Did you answer what the problem is asking for? Yes!

38. Don cracks open a piggy bank and finds $3.15, all in nickels and dimes. There are 3 more dimes than nickels. How many nickels does Don have?

1) Identify a variable.  
   \[ n = \text{nickels} \]

2) Write an equation.  
   \[ .05n + .10(n + 3) = 3.15 \]

3) Solve the equation.

4) State your answer.  
   \[ 19 \text{ nickels} \]

5) Check your answer. Does the answer makes sense? Yes!  
   Did you answer what the problem is asking for? Yes!

39. Mary inherits $22,300 and decides to invest in two different types of accounts, a savings account paying 2% interest, and a certificate of deposit paying 4% interest. She decides to invest $7,300 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

1) Identify a variable.  
   \[ x = \text{amount invested in savings account} \]

2) Write an equation.  
   \[ x + (x + 7300) = 22300 \]

3) Solve the equation.

4) State your answer.  
   \[ $7500 was invested into the savings account \]

5) Check your answer. Does the answer makes sense? Yes!  
   Did you answer what the problem is asking for? Yes!
40. Amber inherits $26,000 and decides to invest in two different types of accounts, a savings account paying 2.25% interest, and a certificate of deposit paying 4.25% interest. She decides to invest $6,200 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

1) Identify a variable. \[ x = \text{amount invested in savings account} \]
2) Write an equation. \[ x + (x + 6200) = 26,000 \]
3) Solve the equation.
4) State your answer. \$9900 was invested into the savings account
5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!

41. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 8 children must be accompanied by one adult guardian. Hence, the organization orders 8 times as many child tickets as it does adult tickets. Child tickets are $6 and adult tickets are $16. If the total cost of tickets is $1024, how many adult tickets were purchased?

1) Identify a variable. \[ A = \text{adult tickets} \]
2) Write an equation. \[ 16A + 6(8A) = 1024 \]
3) Solve the equation.
4) State your answer. 16 adult tickets
5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!

42. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 3 children must be accompanied by one adult guardian. Hence, the organization orders 3 times as many child tickets as it does adult tickets. Child tickets are $3 and adult tickets are $18. If the total cost of tickets is $351, how many adult tickets were purchased?

1) Identify a variable. \[ A = \text{adult tickets} \]
2) Write an equation. \[ 18A + 3(3A) = 351 \]
3) Solve the equation.
4) State your answer. 13 adult tickets
5) Check your answer. Does the answer make sense? Yes!
Did you answer what the problem is asking for? Yes!
43. Alan inherits $25,600 and decides to invest in two different types of accounts, a savings account paying 3.5% interest, and a certificate of deposit paying 6% interest. He decides to invest $6,400 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

1) Identify a variable.  
   \[ x = \text{amount invested in savings account} \]

2) Write an equation.  
   \[ x + (x + 6400) = 25,600 \]

3) Solve the equation. 

4) State your answer.  
   \$9600 was invested into the savings account \]

5) Check your answer.  Does the answer makes sense?  Yes!  
   Did you answer what the problem is asking for?  Yes!

44. Mercy inherits $27,100 and decides to invest in two different types of accounts, a savings account paying 3% interest, and a certificate of deposit paying 4% interest. She decides to invest $8,700 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

1) Identify a variable.  
   \[ x = \text{amount invested in savings account} \]

2) Write an equation.  
   \[ x + (x + 8700) =27,100 \]

3) Solve the equation. 

4) State your answer.  
   \$9200 was invested into the savings account \]

5) Check your answer.  Does the answer makes sense?  Yes!  
   Did you answer what the problem is asking for?  Yes!

45. Tony inherits $20,600 and decides to invest in two different types of accounts, a savings account paying 2% interest, and a certificate of deposit paying 4% interest. He decides to invest $9,200 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

1) Identify a variable.  
   \[ x = \text{amount invested in savings account} \]

2) Write an equation.  
   \[ x + (x + 9200) = 20,600 \]

3) Solve the equation. 

4) State your answer.  
   \$5700 was invested into the savings account \]

5) Check your answer.  Does the answer makes sense?  Yes!  
   Did you answer what the problem is asking for?  Yes!
46. Connie inherits $17,100 and decides to invest in two different types of accounts, a savings account paying 2% interest, and a certificate of deposit paying 5.5% interest. She decides to invest $6,100 more in the certificate of deposit than in savings. Find the amount invested in the savings account.

1) Identify a variable. \( x = \) amount invested in savings account

2) Write an equation. \( x + (x + 6100) = 17,100 \)

3) Solve the equation.

4) State your answer. $5,500 was invested into the savings account

5) Check your answer. Does the answer make sense? Yes! Did you answer what the problem is asking for? Yes!

47. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 2 children must be accompanied by one adult guardian. Hence, the organization orders 2 times as many child tickets as it does adult tickets. Child tickets are $2 and adult tickets are $14. If the total cost of tickets is $234, how many adult tickets were purchased?

1) Identify a variable. \( A = \) adult tickets

2) Write an equation. \( 14A + 2(2A) = 234 \)

3) Solve the equation.

4) State your answer. 13 adult tickets

5) Check your answer. Does the answer make sense? Yes! Did you answer what the problem is asking for? Yes!

48. A large children’s organization purchases tickets to the circus. The organization has a strict rule that every 8 children must be accompanied by one adult guardian. Hence, the organization orders 8 times as many child tickets as it does adult tickets. Child tickets are $8 and adult tickets are $13. If the total cost of tickets is $1078, how many adult tickets were purchased?

1) Identify a variable. \( A = \) adult tickets

2) Write an equation. \( 13A + 8(8A) = 1078 \)

3) Solve the equation.

4) State your answer. 14 adult tickets

5) Check your answer. Does the answer make sense? Yes! Did you answer what the problem is asking for? Yes!