

Worksheet

05/15/2020

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Problem quickname: 3102

1)

Quick:
3102

Solve the equation: Determine the value of the variable. Combine like terms and perform equivalent transformations.

- a) $-36 + 11(v + 3) - 4 = 8v + 1 - 2$ | expand/multiply out parenthesis
 $-36 + 11v + 33 - 4 = 8v + 1 - 2$ | rearrange and combine like terms
 $11v - 7 = 8v - 1$ | +7
 $11v = 8v + 6$ | -8v
 $3v = 6$ | : 3
 $v = 2$
- b) $-6h - 204 + 8(h + 2) - 4 = -4h + 2h$ | expand/multiply out parenthesis
 $-6h - 204 + 8h + 16 - 4 = -4h + 2h$ | rearrange and combine like terms
 $2h - 192 = -2h$ | +192
 $2h = -2h + 192$ | +2h
 $4h = 192$ | : 4
 $h = 48$
- c) $7(w + 12) - 3w = 280 + 4 - 1 + 1$ | expand/multiply out parenthesis
 $7w + 84 - 3w = 280 + 4 - 1 + 1$ | rearrange and combine like terms
 $4w + 84 = 284$ | -84
 $4w = 200$ | : 4
 $w = 50$
- d) $3 + 9(a + 10) - 10a - 1 = 272 - 4a$ | expand/multiply out parenthesis
 $3 + 9a + 90 - 10a - 1 = 272 - 4a$ | rearrange and combine like terms
 $-a + 92 = -4a + 272$ | -92
 $-a = -4a + 180$ | +4a
 $3a = 180$ | : 3
 $a = 60$
- e) $3n + 8(n + 8) - 2n = 551 + 4n + 3$ | expand/multiply out parenthesis
 $3n + 8n + 64 - 2n = 551 + 4n + 3$ | rearrange and combine like terms
 $9n + 64 = 4n + 554$ | -64
 $9n = 4n + 490$ | -4n
 $5n = 490$ | : 5
 $n = 98$

2)

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Solve the equation: Determine the value of the variable. Combine like terms and

perform equivalent transformations.

- a) $11(x + 6) - 1 = 8x + 137$ | expand/multiply out parenthesis
 $11x + 66 - 1 = 8x + 137$ | rearrange and combine like terms
 $11x + 65 = 8x + 137$ | -65
 $11x = 8x + 72$ | $-8x$
 $3x = 72$ | $: 3$
 $x = 24$
- b) $10(y + 3) - 766 = -2y + 4y$ | expand/multiply out parenthesis
 $10y + 30 - 766 = -2y + 4y$ | rearrange and combine like terms
 $10y - 736 = 2y$ | $+736$
 $10y = 2y + 736$ | $-2y$
 $8y = 736$ | $: 8$
 $y = 92$
- c) $11(t + 4) - 470 = t + 4t$ | expand/multiply out parenthesis
 $11t + 44 - 470 = t + 4t$ | rearrange and combine like terms
 $11t - 426 = 5t$ | $+426$
 $11t = 5t + 426$ | $-5t$
 $6t = 426$ | $: 6$
 $t = 71$
- d) $11(u + 7) - 364 = u + 3u$ | expand/multiply out parenthesis
 $11u + 77 - 364 = u + 3u$ | rearrange and combine like terms
 $11u - 287 = 4u$ | $+287$
 $11u = 4u + 287$ | $-4u$
 $7u = 287$ | $: 7$
 $u = 41$
- e) $10(i + 1) - 238 = 6i - 2i$ | expand/multiply out parenthesis
 $10i + 10 - 238 = 6i - 2i$ | rearrange and combine like terms
 $10i - 228 = 4i$ | $+228$
 $10i = 4i + 228$ | $-4i$
 $6i = 228$ | $: 6$
 $i = 38$

3)

Solve the equation: Determine the value of the variable x. Combine like terms and perform equivalent transformations.

- a) $9(x + 4) - 244 = 5x - 2 - 2$ | expand/multiply out parenthesis
 $9x + 36 - 244 = 5x - 2 - 2$ | rearrange and combine like terms
 $9x - 208 = 5x - 4$ | $+208$
 $9x = 5x + 204$ | $-5x$
 $4x = 204$ | $: 4$
 $x = 51$

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- b) $7(x + 7) - 402 = 3x + 2 - 3$ | expand/multiply out parenthesis
 $7x + 49 - 402 = 3x + 2 - 3$ | rearrange and combine like terms
 $7x - 353 = 3x - 1$ | +353
 $7x = 3x + 352$ | -3x
 $4x = 352$ | : 4
 $x = 88$
- c) $10(x + 5) - 224 - 3x = 3x + 2$ | expand/multiply out parenthesis
 $10x + 50 - 224 - 3x = 3x + 2$ | rearrange and combine like terms
 $7x - 174 = 3x + 2$ | +174
 $7x = 3x + 176$ | -3x
 $4x = 176$ | : 4
 $x = 44$
- d) $10(x + 8) - 107 = 3x + 8x - 4x$ | expand/multiply out parenthesis
 $10x + 80 - 107 = 3x + 8x - 4x$ | rearrange and combine like terms
 $10x - 27 = 7x$ | +27
 $10x = 7x + 27$ | -7x
 $3x = 27$ | : 3
 $x = 9$
- e) $7(x + 4) - 2 - 62 = 9x - 5x$ | expand/multiply out parenthesis
 $7x + 28 - 2 - 62 = 9x - 5x$ | rearrange and combine like terms
 $7x - 36 = 4x$ | +36
 $7x = 4x + 36$ | -4x
 $3x = 36$ | : 3
 $x = 12$

4)

Solve the equation: Determine the value of the variable. Combine like terms and perform equivalent transformations.

- a) $8(n + 9) + 4 = 5n + 140 + 2$ | expand/multiply out parenthesis
 $8n + 72 + 4 = 5n + 140 + 2$ | rearrange and combine like terms
 $8n + 76 = 5n + 142$ | -76
 $8n = 5n + 66$ | -5n
 $3n = 66$ | : 3
 $n = 22$
- b) $8(r + 4) + r = 236 + 4 + 5r$ | expand/multiply out parenthesis
 $8r + 32 + r = 236 + 4 + 5r$ | rearrange and combine like terms
 $9r + 32 = 5r + 240$ | -32
 $9r = 5r + 208$ | -5r
 $4r = 208$ | : 4
 $r = 52$

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$$\begin{array}{l|l}
\text{c) } 11(p + 7) - 3p = 801 + 3 + 1 & \text{expand/multiply out paranthesis} \\
11p + 77 - 3p = 801 + 3 + 1 & \text{rearrange and combine like terms} \\
8p + 77 = 805 & | -77 \\
8p = 728 & | : 8 \\
p = 91 & \\
\hline
\text{d) } 11(s + 3) - 126 = 7s - 1 + 4 & \text{expand/multiply out paranthesis} \\
11s + 33 - 126 = 7s - 1 + 4 & \text{rearrange and combine like terms} \\
11s - 93 = 7s + 3 & | +93 \\
11s = 7s + 96 & | -7s \\
4s = 96 & | : 4 \\
s = 24 & \\
\hline
\text{e) } 11(c + 3) - 319 = 6c + 3 - 4 & \text{expand/multiply out paranthesis} \\
11c + 33 - 319 = 6c + 3 - 4 & \text{rearrange and combine like terms} \\
11c - 286 = 6c - 1 & | +286 \\
11c = 6c + 285 & | -6c \\
5c = 285 & | : 5 \\
c = 57 &
\end{array}$$

Good Luck!