

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) $11(v + 2) - 1 + 5v = 5v + 624 + 2v$ | expand/multiply out parenthesis
 $11v + 22 - 1 + 5v = 5v + 624 + 2v$ | rearrange and combine like terms
 $16v + 21 = 7v + 624$ | -21
 $16v = 7v + 603$ | $-7v$
 $9v = 603$ | $: 9$
 $v = 67$
- b) $-308 - f + 9(f + 6) = f - 4 + 2f$ | expand/multiply out parenthesis
 $-308 - f + 9f + 54 = f - 4 + 2f$ | rearrange and combine like terms
 $8f - 254 = 3f - 4$ | $+254$
 $8f = 3f + 250$ | $-3f$
 $5f = 250$ | $: 5$
 $f = 50$
- c) $8(w + 3) - 7w + 3w = 56 + 3 + 1$ | expand/multiply out parenthesis
 $8w + 24 - 7w + 3w = 56 + 3 + 1$ | rearrange and combine like terms
 $4w + 24 = 60$ | -24
 $4w = 36$ | $: 4$
 $w = 9$
- d) $-4d + 10(d + 7) - 3d - 3 = 304 - 3$ | expand/multiply out parenthesis
 $-4d + 10d + 70 - 3d - 3 = 304 - 3$ | rearrange and combine like terms
 $3d + 67 = 301$ | -67
 $3d = 234$ | $: 3$
 $d = 78$
- e) $10(b + 5) - 1 + 2 = 6b + 66 - 3$ | expand/multiply out parenthesis
 $10b + 50 - 1 + 2 = 6b + 66 - 3$ | rearrange and combine like terms
 $10b + 51 = 6b + 63$ | -51
 $10b = 6b + 12$ | $-6b$
 $4b = 12$ | $: 4$
 $b = 3$

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

perform equivalent transformations.

$$\begin{array}{l|l}
 \text{a) } -628 + 4 + 7(w + 12) = 2w + 3w - 4w & \text{expand/multiply out parenthesis} \\
 -628 + 4 + 7w + 84 = 2w + 3w - 4w & \text{rearrange and combine like terms} \\
 7w - 540 = w & +540 \\
 7w = w + 540 & -w \\
 6w = 540 & : 6 \\
 w = 90 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{b) } -336 + 11(p + 8) - 10p = -7p + 4 + 4p & \text{expand/multiply out parenthesis} \\
 -336 + 11p + 88 - 10p = -7p + 4 + 4p & \text{rearrange and combine like terms} \\
 p - 248 = -3p + 4 & +248 \\
 p = -3p + 252 & +3p \\
 4p = 252 & : 4 \\
 p = 63 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{c) } 11(c + 9) - 325 = 11c - 2 + 4 - 3c & \text{expand/multiply out parenthesis} \\
 11c + 99 - 325 = 11c - 2 + 4 - 3c & \text{rearrange and combine like terms} \\
 11c - 226 = 8c + 2 & +226 \\
 11c = 8c + 228 & -8c \\
 3c = 228 & : 3 \\
 c = 76 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{d) } 10(s + 9) - 125 = 10s - 3 - 4s + 4 & \text{expand/multiply out parenthesis} \\
 10s + 90 - 125 = 10s - 3 - 4s + 4 & \text{rearrange and combine like terms} \\
 10s - 35 = 6s + 1 & +35 \\
 10s = 6s + 36 & -6s \\
 4s = 36 & : 4 \\
 s = 9 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{e) } -3k - 9k - 170 + 10(k + 1) = -5k - 1 & \text{expand/multiply out parenthesis} \\
 -3k - 9k - 170 + 10k + 10 = -5k - 1 & \text{rearrange and combine like terms} \\
 -2k - 160 = -5k - 1 & +160 \\
 -2k = -5k + 159 & +5k \\
 3k = 159 & : 3 \\
 k = 53 &
 \end{array}$$

3)

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

$$\begin{array}{l|l}
 \text{a) } 7(d + 10) - d = 228 + 4 & \text{expand/multiply out parenthesis} \\
 7d + 70 - d = 228 + 4 & \text{rearrange and combine like terms} \\
 6d + 70 = 232 & -70 \\
 6d = 162 & : 6 \\
 d = 27 &
 \end{array}$$

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$$\begin{array}{l|l}
 \text{b) } 10(s+4) - 197 = 7s - 1 & \text{expand/multiply out paranthesis} \\
 10s + 40 - 197 = 7s - 1 & \text{rearrange and combine like terms} \\
 10s - 157 = 7s - 1 & +157 \\
 10s = 7s + 156 & -7s \\
 3s = 156 & : 3 \\
 s = 52 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{c) } 10(r+9) - 266 = 10r - 4r & \text{expand/multiply out paranthesis} \\
 10r + 90 - 266 = 10r - 4r & \text{rearrange and combine like terms} \\
 10r - 176 = 6r & +176 \\
 10r = 6r + 176 & -6r \\
 4r = 176 & : 4 \\
 r = 44 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{d) } 11(c+5) - 253 = 10c - 2c & \text{expand/multiply out paranthesis} \\
 11c + 55 - 253 = 10c - 2c & \text{rearrange and combine like terms} \\
 11c - 198 = 8c & +198 \\
 11c = 8c + 198 & -8c \\
 3c = 198 & : 3 \\
 c = 66 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{e) } 11(z+7) + 4z = 10z + 107 & \text{expand/multiply out paranthesis} \\
 11z + 77 + 4z = 10z + 107 & \text{rearrange and combine like terms} \\
 15z + 77 = 10z + 107 & -77 \\
 15z = 10z + 30 & -10z \\
 5z = 30 & : 5 \\
 z = 6 &
 \end{array}$$

4)

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

$$\begin{array}{l|l}
 \text{a) } 9(x+9) - 9x = 194 - 5 - 4x & \text{expand/multiply out paranthesis} \\
 9x + 81 - 9x = 194 - 5 - 4x & \text{rearrange and combine like terms} \\
 81 = -4x + 189 & -81 \\
 0 = -4x + 108 & +4x \\
 4x = 108 & : 4 \\
 x = 27 &
 \end{array}$$

$$\begin{array}{l|l}
 \text{b) } 9(x+10) - 254 + 4 = 4x + x & \text{expand/multiply out paranthesis} \\
 9x + 90 - 254 + 4 = 4x + x & \text{rearrange and combine like terms} \\
 9x - 160 = 5x & +160 \\
 9x = 5x + 160 & -5x \\
 4x = 160 & : 4 \\
 x = 40 &
 \end{array}$$

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$$\begin{array}{l|l}
\text{c) } 10(x + 7) - 4x - 3 = 635 - 4 & \text{expand/multiply out paranthesis} \\
10x + 70 - 4x - 3 = 635 - 4 & \text{rearrange and combine like terms} \\
6x + 67 = 631 & | -67 \\
6x = 564 & | : 6 \\
x = 94 &
\end{array}$$

$$\begin{array}{l|l}
\text{d) } 5(x + 18) - 311 - 4 = 4x - 2x & \text{expand/multiply out paranthesis} \\
5x + 90 - 311 - 4 = 4x - 2x & \text{rearrange and combine like terms} \\
5x - 225 = 2x & | +225 \\
5x = 2x + 225 & | -2x \\
3x = 225 & | : 3 \\
x = 75 &
\end{array}$$

$$\begin{array}{l|l}
\text{e) } 11(x + 6) - 119 = 5x + 3 - 2 & \text{expand/multiply out paranthesis} \\
11x + 66 - 119 = 5x + 3 - 2 & \text{rearrange and combine like terms} \\
11x - 53 = 5x + 1 & | +53 \\
11x = 5x + 54 & | -5x \\
6x = 54 & | : 6 \\
x = 9 &
\end{array}$$

Good Luck!