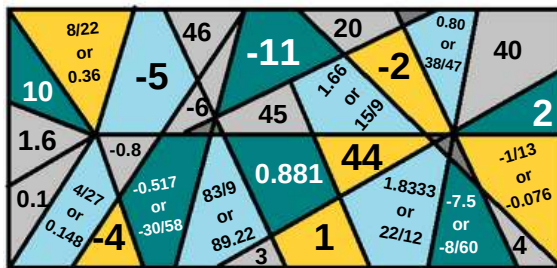


# Answer



$$\begin{aligned}
 1. \quad & 3(2q-6q) - 12 = 10 \\
 & 6q - 18q - 12 = 10 \\
 & -12q - 12 = 10 \\
 & -12q = 10 + 12 \\
 & -12q = 22 \\
 & \mathbf{q = 1.8333 \text{ or } 22/12}
 \end{aligned}$$

$$\begin{aligned}
 2. \quad & -k - 5 - 2k = k + 15 \\
 & -3k - 5 = k + 15 \\
 & -3k - k = 15 + 5 \\
 & -4k = 20 \\
 & \mathbf{k = -5}
 \end{aligned}$$

$$\begin{aligned}
 3. \quad & -5(4a - 2) = (7a + 6) \\
 & -20a + 10 = 7a + 6 \\
 & -20a - 7a = 6 - 10 \\
 & -27a = 4 \\
 & \mathbf{a = 4/27 \text{ or } 0.148}
 \end{aligned}$$

$$\begin{aligned}
 4. \quad & 3(5 - z) = 6z \\
 & 15 - 3z = 6z \\
 & 15 = 6z + 3z \\
 & 15 = 9z \\
 & \mathbf{1.66 \text{ or } 15/9 = z}
 \end{aligned}$$

$$\begin{aligned}
 5. \quad & 6x + 7 = 3(5x + 30) \\
 & 6x + 7 = 15x + 90 \\
 & 6x - 15x = 90 - 7 \\
 & -9x = 83 \\
 & \mathbf{x = 83/9 \text{ or } 89.22}
 \end{aligned}$$

$$\begin{aligned}
 6. \quad & 19(2 + x) = 28x \\
 & 38 + 19x = -28x \\
 & 38 = -28x - 19x \\
 & 38 = -47x \\
 & \mathbf{0.80 \text{ or } 38/47 = x}
 \end{aligned}$$

$$\begin{aligned}
 7. \quad & 77a + 4 = 5(2a + 16) \\
 & 77a + 4 = 10a + 80 \\
 & 67a = 76 \\
 & \mathbf{0.881 = a}
 \end{aligned}$$

$$\begin{aligned}
 8. \quad & 4 = 7y - (4 + 3y) \\
 & 4 = 7y - 4 - 3y \\
 4 + 4 & = 4y \\
 8 & = 4y \\
 \mathbf{2} & = \mathbf{y}
 \end{aligned}$$

$$\begin{aligned}
 9. \quad & 22z = 15(2 + 6z) \\
 & 22z = 30 + 80z \\
 & -30 = 80z - 22z \\
 & -30 = 58z \\
 & \mathbf{-0.517 \text{ or } -30/58 = z}
 \end{aligned}$$

$$\begin{aligned}
 10. \quad & r = 60 - (2r + 30) \\
 & r = 60 - 2r - 30 \\
 r + 2r & = 30 \\
 3r & = 30 \\
 \mathbf{r} & = \mathbf{10}
 \end{aligned}$$

$$\begin{aligned}
 11. \quad & -2p = 3(20 - 2p) \\
 & -2p = 60 - 6p \\
 -2p + 6p & = 60 \\
 -8p & = 60 \\
 & \mathbf{-7.5 \text{ or } -8/60 = p}
 \end{aligned}$$

$$\begin{aligned}
 12. \quad & 2(x - 5) = 5x + 23 \\
 & 2x - 10 = 5x + 23 \\
 2x - 5x & = 23 + 10 \\
 -3x & = 33 \\
 \mathbf{x} & = \mathbf{-11}
 \end{aligned}$$

$$\begin{aligned}
 13. \quad & 6w - 10 = 8w - 2 \\
 & 6w - 10 = 8w - 2 \\
 -10 + 2 & = 8w - 6w \\
 -8 & = 2w \\
 \mathbf{-4} & = \mathbf{w}
 \end{aligned}$$

$$\begin{aligned}
 14. \quad & -3b(4 - 6) = 220 + b \\
 & -12b + 18b = 220 + b \\
 -12b + 18b - b & = 220 \\
 5b & = 220 \\
 \mathbf{b} & = \mathbf{44}
 \end{aligned}$$

$$\begin{aligned}
 15. \quad & -5x - 25 = -4(6 - 2x) \\
 & -5x - 25 = -24 + 8x \\
 -25 + 24 & = 8x + 5x \\
 -1 & = 13x \\
 & \mathbf{-1/13 \text{ or } -0.076 = x}
 \end{aligned}$$

$$\begin{aligned}
 16. \quad & 8(y - 2) = 6y - 20 \\
 & 8y - 16 = 6y - 20 \\
 8y - 6y & = -20 + 16 \\
 2y & = -4 \\
 \mathbf{y} & = \mathbf{-2}
 \end{aligned}$$

$$\begin{aligned}
 17. \quad & 3 - 10x = 12x - 5 \\
 & 3 + 5 = 12x + 10x \\
 8 & = 22x \\
 & \mathbf{8/22 \text{ or } 0.36 = x}
 \end{aligned}$$

$$\begin{aligned}
 18. \quad & 20 - 4(2x + 2) = 3(x + 5) \\
 & 20 - 8x + 8 = 3x + 15 \\
 20 - 15 + 8 & = 3x + 8x \\
 13 & = 13x \\
 \mathbf{1} & = \mathbf{x}
 \end{aligned}$$