

$$1. \begin{array}{r} 4x + 27 = 3x \\ -3x \quad -3x \end{array}$$

$$x + 27 = 0 \\ -27 \quad -27$$

$$\boxed{x = -27}$$

$$2. \begin{array}{r} -7 + 11g = 9 - 5g \\ +5g \quad +5g \end{array}$$

$$-7 + 16g = 9 \\ +7 \quad +7$$

$$\frac{16g}{16} = \frac{16}{16}$$

$$\boxed{g = 1}$$

$$3. \begin{array}{r} 12y + 21 = 9y \\ -9y \quad -9y \end{array}$$

$$3y + 21 = 0 \\ -21 \quad -21$$

$$\frac{3y}{3} = \frac{-21}{3}$$

$$\boxed{y = -7}$$

$$4. 3(4 + 4x) = 12x + 12$$

$$12 + 12x = 12x + 12 \\ -12x \quad -12x$$

$$12 = 12$$

$\boxed{\text{Infinite Solutions}}$

$$5. \begin{array}{r} -2m = 16m - 9 \\ +2m \quad +2m \end{array}$$

$$0 = 18m - 9 \\ +9 \quad +9$$

$$\frac{9}{18} = \frac{18m}{18}$$

$$\boxed{\frac{1}{2} = m}$$

$$6. 24 - 6k = 6(4 - k)$$

$$24 - 6k = 24 - 6k \\ +6k \quad +6k$$

$$24 = 24$$

$\boxed{\text{Infinite Solution}}$

$$7. \begin{array}{r} 12c - 4 = 12c \\ -12c \quad -12c \end{array}$$

$$-4 \neq 0$$

$\boxed{\text{No Solution}}$

$$8. \frac{1}{4}(60 + 16s) = 15 + 4s$$

$$15 + 4s = 15 + 4s \\ -4s \quad -4s$$

$$15 = 15$$

$\boxed{\text{Infinite Solutions}}$

$$9. -30d + 12 = 18d$$

$$+30d \quad +30d$$

$$\frac{12}{48} = \frac{18d}{48}$$

$$\boxed{\frac{1}{4} = d}$$

$$10. -(8n - 2) = 3 + 10(1 - 3n)$$

$$-8n + 2 = 3 + 10 - 30n$$

$$-8n + 2 = 13 - 30n$$

$$+30n \quad +30n$$

$$22n + 2 = 13 \\ -2 \quad -2$$

$$\frac{22n}{22} = \frac{11}{22}$$

$$\boxed{n = \frac{1}{2}}$$

$$11. 6 - (-5r) = 5r - 3$$

$$6 + 5r = 5r - 3$$

$$-5r \quad -5r$$

$$6 \neq -3$$

no solution

$$12. 10(-4 + y) = 2y$$

$$-40 + 10y = 2y$$

$$-2y \quad -2y$$

$$-40 + 8y = 0$$

$$+40 \quad +40$$

$$8y = 40$$

$$\frac{8y}{8} = \frac{40}{8}$$

$$13. 6s - 11 = -2s + 5$$

$$8s - 11 = 5$$

$$8s = 16$$

$s = 2$

$$14. -2(6 - 10m) = 10(2m - 6)$$

$$-12 + 20m = 20m - 60$$

$$-20m \quad -20m$$

$$-12 \neq -60$$

no solutions

$$15. -7 + 4m = 6m - 5$$

$$-4m \quad -4m$$

$$-7 = 2m - 5$$

$$+5 \quad +5$$

$$-2 = 2m$$

$m = -1$

$$\frac{3}{4} \cdot \frac{24}{4} \quad \frac{3}{4} \cdot \frac{24}{4}$$

$$16. \frac{3}{4}(24 - 8b) = 2(5b + 1)$$

$$18 - 6b = 10b + 2$$

$$+6b \quad +6b$$

$$18 = 16b + 2$$

$$16 = 16b$$

$b = 1$

$$17. \frac{1}{2}(12n - 4) = 14 - 10n$$

$$6n - 2 = 14 - 10n$$

$$+10n \quad +10n$$

$$16n - 2 = 14$$

$$16n = 16$$

$n = 1$

$$18. -4(z - 3) = -z$$

$$-4z + 12 = -z$$

$$+4z \quad +4z$$

$$12 = 3z$$

$4 = z$

$$19. 8 - 9t = 21t - 17$$

$$+17 \quad +17$$

$$25 = 30t - 17$$

$$+17 \quad +17$$

$$\frac{25}{30} = \frac{30t}{30}$$

$t = \frac{5}{6}$

$$20. 8a - 4(-5a - 2) = 12a$$

$$8a + 20a + 8 = 12a$$

$$28a + 8 = 12a$$

$$-28a \quad -28a$$

$$8 = -16a$$

$$\frac{8}{-16} = \frac{-16a}{-16}$$

$a = -\frac{1}{2}$