**3.5 Elimination Method – Solving Systems of Equations** Solutions **Practice**

Algebra 1

**Which method would be best for solving this system, Substitution or Elimination? Circle the part of the system that justifies your answer.**

| | | | |
|---|---|---|---|
| 1. $3x + 9y = 9$<br>$x + 3y = 3$<br>Substitution | 2. $-3x - 4y = 5$<br>$3x + 2y = -8$<br>Elimination | 3. $4x - 3y = -14$<br>$6x + 3y = -9$<br>Elimination | 4. $2x + 3y = 6$<br>$x = 3y - 12$<br>Substitution |
| 5. $3x = y$<br>$4x - 2y = 2$<br>Substitution | 6. $3x - 13y = -11$<br>$5x + y = 5$<br>Substitution | 7. $8x - 2y = 12$<br>$-4x - 5y = 8$<br>Elimination | 8. $3x + 4y = 10$<br>$5x - 4y = 8$<br>Elimination |

**Solve each system of equations using ELIMINATION.**

9. $3x - 4y = -2$
$2 \cdot [4x + 2y] = (-10) \cdot 2$

$3x - 4y = -2$
$+\ 8x + 4y = -20$
$11x = -22$
$\boxed{x = -2}$

$4(-2) + 2y = -10$
$-8 + 2y = -10$
$2y = -2$
$\boxed{y = -1}$

10. $-8x - 5y = -9$
$+\ 8x - 4y = 36$

$-9y = 27$
$\boxed{y = -3}$

$2x - (-3) = 9$
$2x + 3 = 9$
$2x = 6$
$\boxed{x = 3}$

11. $-7 \cdot (3y - x$
$-7x +$

$7x - 2$
$+\ -7x + 4$
$-1$

$3(-1) -$
$-3 - >$
$-$

12. $2x + 6y = 14$
$-2 \cdot (x + 3y) = 7 \cdot -2$

$2x + 6y = 14$
$+\ -2x - 6y = -14$
$0 = 0$

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

13. $2x + 6y = -2$
$3 \cdot (x - 2y) = 5 \cdot 3$

$2x + 6y = -2$
$+\ 3x - 6y = 15$
$5x = 13$
$\boxed{x = 13/5}$

$13/5 - 2y = 25/5$
$(-\frac{1}{2})\ -2y = 12/5 \cdot (-\frac{1}{2})$
$\boxed{y = -6/5}$

14. $2 \cdot (4x - 3y) = -2 \cdot 2$
$-8x + 6y = -8$

$8x - 6y = -4$
$+\ -8x + 6y = -8$
$0 = -12$

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

15. $10x + 5y = -15$
$3y + 5 = -5x$

$10x+5y=-15$
$-2\cdot(5x+3y)=-5\cdot -2$
$10x+5y=-15$
$+\ -10x-6y=10$
$-y=-5$
$\boxed{y=5}$
$3(5)+5=-5x$
$20=-5x$
$\boxed{-4=x}$

16. $-3\cdot(2x + 4y) = -9\cdot -3$
$2\cdot(3x + 5y) = -12\cdot 2$

$-6x-12y=27$
$+\ 6x+10y=-24$
$-2y=3$
$\boxed{y=-\frac{3}{2}}$
$2x+4(-\frac{3}{2})=-9$
$2x-6=-9$
$2x=-3$
$\boxed{x=-\frac{3}{2}}$

17. $5(6x + 2y) = 4\cdot 5$
$2(-4x - 5y) = -10\cdot 2$

$30x+10y=20$
$+\ -8x-10y=-20$
$22x \quad =0$
$\boxed{x=0}$
$6(0)+2y=4$
$2y=4$
$\boxed{y=2}$

**Simplify each expression**

18. $(4p + 3)(3p - 9)$

$12p^2-36p+9p-27$

$\boxed{12p^2-27p-27}$

19. $(3a^2 - 4) + (5a^2 - 2)$

add!

$\boxed{8a^2-6}$

20. $(5c^2 + 2c + 8) - (4c^2 - 5)$

Subtract!
$5c^2+2c+8-4c^2+5$

$\boxed{c^2+2c+13}$