Key

ALGEBRAIC PROPORTIONS

1 $\frac{4}{3} = \frac{x}{6}$

$3x = 24$

$x = 8$

2 $\frac{2}{10} = \frac{4}{n+5}$

$2n + 10 = 40$

$2n = 30$

$n = 15$

3 $\frac{y-3}{2} = \frac{y}{5}$

$5y - 15 = 2y$

$-15 = -3y$

$y = 5$

4 $\frac{2k-3}{k+9} = \frac{3}{5}$

$5(2k-3) = 3(k+9)$

$10k - 15 = 3k + 27$

$7k - 15 = 27$

$7k = 42$

$k = 6$

ARE YOU A PROPORTION SUPER STAR?

Solve the following proportions. Connect your answers on the back as you go.

1. $\frac{x+2}{x+7} = \frac{3}{6}$

$6x + 12 = 3x + 21$

$3x = 9$

$x = 3$

2. $\frac{x+10}{8} = \frac{x}{3}$

$3x + 30 = 8x$

$30 = 5x$

$x = 6$

3. $\frac{x-2}{x} = \frac{3}{6}$

$6x - 12 = 3x$

$-12 = -3x$

$x = -4$

4. $\frac{x-4}{6} = \frac{x-7}{9}$

$9x - 36 = 6x - 42$

$3x - 36 = -42$

$3x = -6$

$x = -2$

5. $\frac{3}{2} = \frac{x-3}{x+1}$

$3x + 3 = 2x - 6$

$x + 3 = -6$

$x = -9$

6. $\frac{25}{x+2} = \frac{5}{3}$

$5x + 10 = 75$

$5x = 65$

$x = 13$

7. $\frac{8}{x-9} = \frac{6}{x-8}$

$8x - 64 = 6x - 54$

$2x - 64 = -54$

$2x = 10$

$x = 5$

8. $\frac{2}{x+4} = \frac{4}{x}$

$2x = 4x + 16$

$-2x = 16$

$x = -8$

9. $\frac{5}{2}=\frac{x-8}{x-2}$

$5x-10=2x-16$

$3x-10=-16$

$3x=-6$ $x=-2$

10. $\frac{6}{x-1}=\frac{8}{x-6}$

$6x-36=8x-8$

$-36=2x-8$

$-28=2x$ $x=-14$

11. $\frac{x-7}{x-9}=\frac{3}{4}$

$4x-28=3x-27$

$x-28=-27$

$x=1$

12. $\frac{7}{5}=\frac{x}{x+2}$

$7x+14=5x$

$2x+14=0$

$2x=-14$ $x=-7$

13. $\frac{x+9}{9}=\frac{x+5}{3}$

$3x+27=9x+45$

$27=6x+45$

$-18=6x$ $x=-3$

14. $\frac{7}{2x-8}=\frac{3}{x-6}$

$7x-42=6x-24$

$x-42=-24$

$x=18$

15. $\frac{x-6}{9}=\frac{x+9}{4}$

$4x-24=9x+81$

$-24=5x+81$

$-105=5x$ $x=-21$

16. $\frac{2}{x+5}=\frac{3}{x+4}$

$2x+8=3x+15$

$8=x+15$ $x=-7$

17. $\frac{x}{2}=\frac{x+10}{4}$

$4x=2x+20$

$2x=20$ $x=10$

18. $\frac{x-1}{5}=\frac{x+1}{10}$

$10x-10=5x+5$

$5x-10=5$

$5x=15$ $x=3$