Elementary Algebra
Chapter 2 Test Review Key

1. Solve: $7(3x-1)=-2(x-4)$

$7(3x-1)=-2(x-4)$

$7(3x)+7(-1)=-2(x)-2(-4)$

$21x-7=-2x+8$

$21x+2x=8+7$

$23x=15$

$\frac{23x}{23}=\frac{15}{23}$

$x=\frac{15}{23}$

2. Solve: $-4(8x-3)-5=7(2x-1)$

$-4(8x-3)-5=7(2x-1)$

$-4(8x)-4(-3)-5=7(2x)+7(-1)$

$-32x+12-5=14x-7$

$-32x+7=14x-7$

$-32x-14x=-7-7$

$-46x=-14$

$\frac{-46x}{-46}=\frac{-14}{-46}$

$x=\frac{7}{23}$

3. Solve: $\frac{3}{4}x-1=2x+5$

$\frac{3}{4}x-1=2x+5$

$4\left(\frac{3}{4}x\right)+4(-1)=4(2x)+4(5)$

$3x-4=8x+20$

$3x-8x=20+4$

$-5x=24$

$\frac{-5x}{-5}=\frac{24}{-5}$

$x=\frac{-24}{5}$

4. Solve: $\frac{1}{9}x-1=\frac{1}{2}x-2+x$

$\frac{1}{9}x-1=\frac{1}{2}x-2+x$

$18\left(\frac{1}{9}x\right)+18(-1)=18\left(\frac{1}{2}x\right)+18(-2)+18(x)$

$2x-18=9x-36+18x$

$2x-18=27x-36$

$2x-27x=-36+18$

$-25x=-18$

$\frac{-25x}{-25}=\frac{-18}{-25}$

$x=\frac{18}{25}$

5. Solve: $\frac{x+6}{4}-2x=-3$

$\frac{x+6}{4}-2x=-3$

$4\left(\frac{x+6}{4}\right)+4(-2x)=4(-3)$

$x+6-8x=-12$

$-7x+6=-12$

$-7x=-12-6$

$-7x=-18$

$\frac{-7x}{-7}=\frac{-18}{-7}$

$x=\frac{18}{7}$

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

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

$30\left(\frac{-2}{5}x\right)+30\left(\frac{1}{3}\right)=30\left(\frac{3}{2}\right)$

$6(-2x)+10=15(3)$

$-12x+10=45$

$-12x=45-10$

$-12x=35$

$\frac{-12x}{-12}=\frac{35}{-12}$

$x=\frac{-35}{12}$

7. Solve the following for a: $ab-c-d=efg$

$ab-c-d=efg$

$ab=efg+c+d$

$\frac{ab}{b}=\frac{efg+c+d}{b}$

$a=\frac{efg+c+d}{b}$

8. Solve: $5x - 2 > 83$

$5x - 2 > 83$
$5x > 83 + 2$
$5x > 85$
$\frac{5x}{5} > \frac{85}{5}$
$x > 17$

9. Solve: $4(x - 2) \le 5(3x - 1)$

$4(x - 2) \le 5(3x - 1)$
$4(x) + 4(-2) \le 5(3x) + 5(-1)$
$4x - 8 \le 15x - 5$
$4x - 15x \le -5 + 8$
$-11x \le 3$
$\frac{-11x}{-11} \ge \frac{3}{-11}$
$x \ge \frac{3}{-11}$

10. Solve: $\frac{3}{4}x - x > 8x + \frac{1}{3}$

$\frac{3}{4}x - x > 8x + \frac{1}{3}$
$12\left(\frac{3}{4}x\right) + 12(-x) > 12(8x) + 12\left(\frac{1}{3}\right)$
$3(3x) - 12x > 96x + 4$
$9x - 12x > 96x + 4$
$-3x > 96x + 4$
$-3x - 96x > 4$
$-99x > 4$
$\frac{-99x}{-99} < \frac{4}{-99}$
$x < \frac{-4}{99}$