Answer Key - Unit 4 Review

1) $7x - 13 = 15$

$7x = 28$

$x = 4$

2) $\frac{x}{5} + 3 = -12$

$\frac{x}{5} = -15$

$x = -75$

3) $\frac{-3}{5} \cdot \frac{5}{3}(x - 5) = 50 \cdot \frac{-3}{5}$

$x - 5 = -30$

$x = -25$

4) $18 + 4x = 6x + 12$

$18 = 2x + 12$

$6 = 2x$

$3 = x$

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

$18 - 6x = 10x + 2$

$18 = 16x + 2$

$16 = 16x$

$1 = x$

6) $8x - 4(-5x - 2) = 12x$

$8x + 20x + 8 = 12x$

$28x + 8 = 12x$

$8 = -16x$

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

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

$3x - 5 = 4$

$3x = 9$

$x = 3$

8) $\frac{x-3}{8} - \frac{x+2}{3} = \frac{5}{12}$

LCD = 24

$24\left(\frac{x-3}{8}\right) - 24\left(\frac{x+2}{3}\right) = 24\left(\frac{5}{12}\right)$

$3(x - 3) - 8(x + 2) = 2(5)$

$3x - 9 - 8x - 16 = 10$

$-5x - 25 = 10$

$-5x = 35$

$x = -7$

9) $\frac{x}{6} - 1 = \frac{x - 20}{8}$

LCD = 24

$24\left(\frac{x}{6}\right) - 24(1) = 24\left(\frac{x-20}{8}\right)$

$4x - 24 = 3(x - 20)$

$4x - 24 = 3x - 60$

$x - 24 = -60$

$x = -36$

10) $-6x-5=-2(3x+1)-3$

$-6x-5=-6x-2-3$

$-6x-5=-6x-5$

infinite solutions

11) $0.2(3x-1)=0.25(2x+2)$

$100(0.2)(3x-1)=100(0.25)(2x+2)$

$20(3x-1)=25(2x+2)$

$60x-20=50x+50$

$10x-20=50$

$10x=70$

$x=7$

12) $3(x+4)=8x+6-5x$

$3x+12=3x+6$

no solution

13) $|2x+4|=10$

$2x+4=10 \quad 2x+4=-10$

$2x=6 \quad 2x=-14$

$x=3 \quad x=-7$

$\{3,-7\}$

14) $3|x+1|-2=7$

$3|x+1|=9$

$|x+1|=3$

$x+1=3 \quad x+1=-3$

$x=2 \quad x=-4$

$\{2,-4\}$

15) $A=s^2+2rs$

$A-s^2=2rs$

$\frac{A-s^2}{2s}=r$

16) $ax+bx=c$

$x(a+b)=c$

$x=\frac{c}{a+b}$

17) $A=P(l+rt)$

$A=Pl+Prt$

$A-Pl=Prt$

$\frac{A-Pl}{Pt}=r$

18) $S=vt+16t^2$

$S-16t^2=vt$

$\frac{S-16t^2}{t}=v$

19) $F=\frac{9}{5}C+32$

$F=\frac{9}{5}(40)+32$

$F=72+32$

$F=104°$

20) x = # of yards run on Wed. $=1300$ yds

$x+100$ = # of yards run on Tues. $=1400$ yds

$2x$ = # of yards run on Mon. $=2600$ yds

$2x+x+100+x=5300$

$4x+100=5300$

$4x=5200$

$x=1300$

21) $ax=c-b$ subtraction prop. of equality

$x=\frac{c-b}{a}$ division prop. of equality