Unit 5: Equations Name: Key

Pre-Algebra: Practice Test Hour: _____

5.1 I can solve one-step equations. 2pts ea.

1. $4m = -24$

$\frac{4m}{4} = \frac{-24}{4}$

$m = -6$

2. $-3 + x = 12$

$-3+x+3 = 12+3$

$x = 15$

3. $f - 7 = 21$

$f-7+7 = 21+7$

$f = 28$

4. $\frac{x}{3} = -4$

$(3)\frac{x}{3} = -4(3)$

$x = -12$

5. $d + 5 = -13$

$d+5-5 = -13-5$

$d = -18$

6. $-3x = -18$

$\frac{-3x}{-3} = \frac{-18}{-3}$

$x = 6$

Score: 12 pts %

5.2 I can solve two-step equations. 3pts ea.

1. $2x + 4 = -12$

$2x+4-4 = -12-4$

$\frac{2x}{2} = \frac{-16}{2}$

$x = -8$

2. $-5g - 5 = -25$

$-5g-5+5 = -25+5$

$\frac{-5g}{-5} = \frac{-20}{-5}$

$g = 4$

3. $\frac{m}{2} + 14 = -28$

$\frac{m}{2}+14-14 = -28-14$

$(2)\frac{m}{2} = -42(2)$

$m = -84$

4. $-d + 3 = 12$

$-d+3-3 = 12-3$

$\frac{-d}{-1} = \frac{9}{-1}$

$d = -9$

5. $6 + \frac{g}{4} = 16$

$6+\frac{g}{4}-6 = 16-6$

$(4)\frac{g}{4} = 10(4)$

$g = 40$

6. $-\frac{p}{6} - 7 = 4$

$-\frac{p}{6}-7+7 = 4+7$

$-\frac{p}{6}(-6) = 11(-6)$

$p = -66$

Score: 18 pts. %

3 pts. ea

5.3 I can solve multi-step equations.

1. $5(d+2) = 25$

$5d + 10 - 10 = 25 - 10$

$\frac{5d}{5} = \frac{15}{5}$

$d = 3$

2. $4b - 7 + 2b - b = 13$

$5b - 7 + 7 = 13 + 7$

$\frac{5b}{5} = \frac{20}{5}$

$b = 4$

3. $11m - 3m + 5 - 6m + 7 = -24$

$2m + 12 - 12 = -24 - 12$

$\frac{2m}{2} = \frac{-36}{2}$

$M = -18$

4. $-3(x+4) = 18$

$-3x - 12 + 12 = 18 + 12$

$\frac{-3x}{-3} = \frac{30}{-3}$

$x = -10$

5. $2(x+4) - 3(x-5) = 5$

$2x + 8 - 3x + 15 = 5$

$-x + 23 - 23 = 5 - 23$

$\frac{-x}{-1} = \frac{-18}{-1}$

$x = 18$

6. $8(d-4) + 7 = 31$

$8d - 32 + 7 = 31$

$8d - 25 + 25 = 31 + 25$

$\frac{8d}{8} = \frac{56}{8}$

$d = 7$

Score: 18 pts. ____%

4 pts ea.

5.4 I can solve equations with variables on both sides.

1. $2(x-3)+4=x+12$

$2x-6+4 = x+12$

$2x-2+2 = x+12+2$

$2x-x = x+14-x$

$x = 14$

2. $-5(x-8)=4(1-12x)+7x$

$-5x+40 = 4-48x+7x$

$-5x+40+41x = 4-41x+41x$

$36x+40 = 4$

$-40 \quad -40$

$\frac{36x}{36} = \frac{-36}{36}$

$x=-1$

3. $-3(x-8)=3x+5(1-x)$

$-3x+24 = 3x+5-5x$

$-3x+24+2x = -2x+5+2x$

$-24 \quad -x+24 = 5$

-24

$\frac{-x}{-1} = \frac{-19}{-1}$

$x=19$

4. $-6(4x+3)=6(-4x-3)$

$-24x-18 = -24x-18$

ARN

Score: 16 pts. %

5.5 I can solve equations with fractions. 3 pts ea.

1. $\frac{2}{9}x - 4 = -8$

$\frac{2}{9}x - 4 + 4 = -8 + 4$

$\left(\frac{9}{2}\right)\frac{2}{9}x = -4\left(\frac{9}{2}\right)$

$x = -18$

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

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

$-3x + 2 - 2 = 20 - 2$

$\frac{-3x}{-3} = \frac{18}{-3}$

$x = -6$

3. $-\frac{4}{5}x + \frac{1}{2} = 6$ LCM=10

$\left(\frac{10}{1}\right)-\frac{4}{5}x + \frac{1}{2}\left(\frac{10}{1}\right) = 6(10)$

$-8x + 5 - 5 = 60 - 5$

$\frac{-8x}{-8} = \frac{55}{-8}$

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

4. $\frac{5}{6} - \frac{1}{7}x = \frac{2}{3}$ LCM=42

$\left(\frac{42}{1}\right)\frac{5}{6} - \frac{1}{7}x\left(\frac{42}{1}\right) = \frac{2}{3}\left(\frac{42}{1}\right)$

$35 - 6x - 35 = 28 - 35$

$\frac{-6x}{-6} = \frac{-7}{-6}$

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

Score: 12 pts · %

5.6 I can solve story problems with equations. 4 pts ea.

1. You are taking a taxi. The driver charges an initial fare of $2, plus $1.75 for every mile driven. How far can you travel in the taxi if you ~~want to~~ leave the driver a $3.50 tip, and you only have $16 to spend?

initial fare + cost per mile + tip = total

$2 + 1.75M + 3.50 = 16$

$-5.5 \quad 1.75M + 5.5 = 16 - 5.5$

$\frac{1.75M}{1.75} = \frac{10.50}{1.75}$

$M = 6$

you can travel 6 miles

2. Andrea works a part-time job as a waitress. She earns $6.95 per hour. For the week, she makes $42.90 in tips. How many hours does she need to work to earn $168 for the week?

hourly wage + tips = total

$6.95h + 42.90 = 168 \quad -42.90$

$\frac{6.95h}{6.95} = \frac{125.10}{6.95}$

$h = 18$

She worked 18 hours

3. You have $100 gift card to spend at Best Buy. You buy a wireless speaker for $45. The movies are on sale for $11 each. How many movies can you buy with the money remaining on the gift card?

Speaker + Movies = Total

$-45 \quad 45 + 11M = 100 \quad -45$

$\frac{11M}{11} = \frac{55}{11}$

$M = 5$

You can buy 5 movies

4. On a class trip, there were 45 more girls than boys. The total number of students on the trip was 211. Write and solve an equation to find the number of girls and boys on the trip.

Boys + Girls = Total

$B + G = 211$

$B + (B+45) = 211$

$-45 \quad 2B + 45 = 211 - 45$

$\frac{2B}{2} = \frac{166}{2}$

$B = 83$

$83 + Girls = 211$

$Girls = 128$

There are 83 boys + 128 girls

Score: 16 pts. %