12-14-17

Aim: SWBAT solve equations with squares AND eliminate decimals and fractions before solving equations.

HW: Packet Pages 37 - 38
Quiz Tuesday

Do Now: Packet Pages 35 # 1 - 7

Pg. 296 #25-28 ; Pg. 301 #21-24

C.L.T.

(25) $5y+8-2y+9y=-16$

$12y+8=-16$

$-8 \quad -8$

$\frac{12y}{12}=\frac{-24}{12}$

$y=-2$

Ck/ $5y+8-2y+9y=-16$

$5(-2)+8-2(-2)+9(-2) \stackrel{?}{=} -16$

$-10+8-(-4)+(-18) \stackrel{?}{=} -16$

$-16 = -16$

C.L.T.

(26) $8k-7k-16-3k=-21$

$-2k-16=-21$

$+16 \quad +16$

$\frac{-2k}{-2}=\frac{-5}{-2}$

$k=\frac{5}{2}$

Ck/ $8k-7k-16-3k=-21$

$8\left(\frac{5}{2}\right)-7\left(\frac{5}{2}\right)-16-3\left(\frac{5}{2}\right) \stackrel{?}{=} -21$

$20-\frac{35}{2}-16-\frac{15}{2} \stackrel{?}{=} -21$

$20-16-25 \stackrel{?}{=} -21$

$-21 = -21$

C.L.T.

(27) $7(t+4)-3(1+t)=-19$

$7t+28-3-3t=-19$

$4t+25=-19$

$-25 \quad -25$

$\frac{4t}{4}=\frac{-44}{4}$

$t=-11$

Ck/ $7(t+4)-3(1+t)=-19$

$7(-11+4)-3(1+(-11)) \stackrel{?}{=} -19$

$7(-7)-3(-10) \stackrel{?}{=} -19$

$-49-(-30) \stackrel{?}{=} -19$

$-19 = -19$

C.L.T.

(28) $-(6-c)+3(2c-7)=1$

$-6+c+6c-21=1$

$7c-27=1$

$+27 \quad +27$

$\frac{7c}{7}=\frac{28}{7}$

$c=4$

Ck/ $-(6-c)+3(2c-7)=1$

$-(6-4)+3(2\cdot4-7) \stackrel{?}{=} 1$

$-(2)+3(8-7) \stackrel{?}{=} 1$

$-2+3(1) \stackrel{?}{=} 1$

$-2+3 \stackrel{?}{=} 1$

$1 = 1$

Pg. 301

(21) $3(j+4) = -2j + j$

$3j + 12 = -j$

$-3j \quad -3j$

$12 = -4j$

$\frac{12}{-4} = \frac{-4j}{-4}$

$-3 = j$

Ck/ $3(j+4) = -2j + j$

$3(-3+4) \stackrel{?}{=} -2(-3) + (-3)$

$3(1) \stackrel{?}{=} 6 + (-3)$

$3 = 3$

(22) $5(t+7) = 2(2t+7)$

$5t + 35 = 4t + 14$

$-4t \quad -4t$

$t + 35 = 14$

$-35 \quad -35$

$t = -21$

Ck/ $5(t+7) = 2(2t+7)$

$5(-21+7) \stackrel{?}{=} 2(2(-21)+7)$

$5(-14) \stackrel{?}{=} 2(-42+7)$

$-70 \stackrel{?}{=} 2(-35)$

$-70 = -70$

(23) $2(c+6) = 5(c+12)$

$2c + 12 = 5c + 60$

$-2c \quad -2c$

$12 = 3c + 60$

$-60 \quad -60$

$\frac{-48}{3} = \frac{3c}{3}$

$-16 = c$

Ck/ $c(c+6) = 5(c+12)$

$2(-16+6) \stackrel{?}{=} 5(-16+12)$

$2(-10) \stackrel{?}{=} 5(-4)$

$-20 = -20$

(24) $6(s-4) = 3(s+9)$

$6s - 24 = 3s + 27$

$-3s \quad -3s$

$3s - 24 = 27$

$+24 \quad +24$

$\frac{3s}{3} = \frac{51}{3}$

$s = 17$

Ck/ $6(s-4) = 3(s+9)$

$6(17-4) \stackrel{?}{=} 3(17+9)$

$6(13) \stackrel{?}{=} 3(26)$

$78 = 78$

AIM: SWBAT solve equations with squares AND solve equations by "clearing out" the fractions and decimals.

DO NOW: Evaluate.

1) $\sqrt{196} =$ 14

2) $\pm\sqrt{64} =$ ± 8

3) $-\sqrt{100} =$ -10

4) $\pm\sqrt{100} =$ ± 10

5) $-\sqrt{121} =$ -11

6) $\sqrt{144} =$ 12

7) If $x^2 = 9$, How many solutions are there to this square root problem? (This means . . . how many values can you substitute in for x to make a true statement?) What are they?

Two solutions. -3 and 3

CLASSWORK:

Solve each equation. Remember: in each equation, there are two possible values for the variable.

1) $x^2 = 25$ $\sqrt{x^2} = \sqrt{25}$ $x = \pm 5$	2) $x^2 = 225$ $\sqrt{x^2} = \sqrt{225}$ $x = \pm 15$	3) $x^2 = 100$ $\sqrt{x^2} = \sqrt{100}$ $x = \pm 10$
4) $x^2 + 2 = 27$ $-2 \quad -2$ $\sqrt{x^2} = \sqrt{25}$ $x = \pm 5$	5) $x^2 + 7 = 43$ $-7 \quad -7$ $\sqrt{x^2} = \sqrt{36}$ $x = \pm 6$	6) $x^2 - 1 = 120$ $+1 \quad +1$ $\sqrt{x^2} = \sqrt{121}$ $x = \pm 11$
7) $2x^2 + 7 = 57$ $-7 \quad -7$ $\frac{2x^2}{2} = \frac{50}{2}$ $\sqrt{x^2} = \sqrt{25}$ $x = \pm 5$	8) $5x^2 - 4 = 1121$ $+4 \quad +4$ $\frac{5x^2}{5} = \frac{1125}{5}$ $\sqrt{x^2} = \sqrt{225}$ $x = \pm 15$	9) $-3x^2 - 18 = -126$ $+18 \quad +18$ $\frac{-3x^2}{-3} = \frac{-108}{-3}$ $\sqrt{x^2} = \sqrt{36}$ $x = \pm 6$

CLASSWORK:

Solve each equation algebraically by "clearing out" the fraction.

- **To clear out the fraction, multiply EVERY TERM in the equation by the LCD (least common denominator) for the fractions.**

1) $9\left(\frac{5}{9}x + 7\right) = 9\left(\frac{1}{9}x - 5\right)$

$5x + 63 = x - 45$

$-x \quad -x$

$4x + 63 = -45$

2) $24\left(\frac{5}{8}x + \frac{5}{6}\right) = 24\left(\frac{-10}{24}\right)$

$15x + 20 = -10$

3) $8\left(x + \frac{1}{4}\right) = 8\left(\frac{3}{8}x - 1\right)$

$8x + 2 = 3x - 8$

$-3x \quad -3x$

$5x + 2 = -8$

4) $3\left(\frac{7}{3}x + 6\right) = 3\left(\frac{5}{3}x\right)$

$7x + 18 = 5x$

$-7x \quad -7x$

$18 = -2x$

Solve each equation by "clearing out" the decimals.

- **To clear out the decimal, move the decimal point the same number of places in EVERY TERM so that you no longer have any decimal numbers in your equation.**

5) $10(0.1x - 2.4) = 10(-2.2)$

$x - 24 = -22$

6) $100(-3x - 1.75) = 100(4.25)$

$-300x - 175 = 425$

7) $(0.4x - 3.6) = 0.3x + 1.2$

*8) $100(0.4x - 0.6) = 100(0.16x - 0.36)$

$40x - 60 = 16x - 36$

$-16x \quad -16x$

$24x - 60 = -36$

9) $3.5x + 6 = 1.5x$

HOMEWORK - SOLVING EQUATIONS WITH SQUARE ROOTS AND "CLEARING OUT" the FRACTIONS OR DECIMALS

Evaluate.

1) $\sqrt{144}$ 2) $-\sqrt{81}$ 3) $\pm\sqrt{25}$ 4) $-\sqrt{4}$ 5) $\pm\sqrt{100}$

SOLVE each equation algebraically. *REMEMBER-Square roots have TWO SOLUTIONS!*

1) $x^2 = 16$	2) $x^2 = 196$	3) $2x^2 = 128$
4) $x^2 - 44 = 100$	5) $x^2 - 23 = 58$	

6) $2x^2 + 10 = 60$	7) $3x^2 + 12 = 204$

Solve each equation by "clearing out" the fractions or decimals.
REMEMBER:

1) $-\frac{3}{5} + x = \frac{7}{10}$

2) $\frac{3}{4}x - 7 = \frac{1}{2}x + 3$

3) $\frac{2}{3}x + \frac{1}{4}x = 22$

4) $0.9x + 1.2 = 0.5x - 2$

5) $3.8 - 0.5x = 0.3$

6) $0.25x + 3.4 = 1.65$