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We are going over the  
rest of the homework

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$$7^2 = 7 \cdot 7 = 49$$

$$(3+4)^2 = 9 + 16 = 25$$

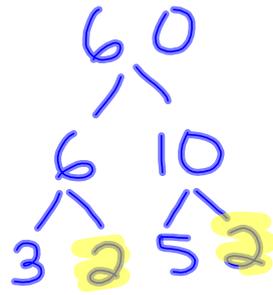
$$(x-3)^2 = (x-3)(x-3)$$

$$x^2 - 3x - 3x + 9$$

$$x^2 - 6x + 9$$

$$\sqrt{X^2} = \sqrt{25}$$

$$X = \pm 5$$



$$\sqrt{X^2} = \sqrt{60}$$

$$X = \pm 2\sqrt{3 \cdot 5}$$

$$X = \pm 2\sqrt{15}$$

$$X^2 + 7 = 20$$

$$\begin{array}{r} -7 \quad -7 \\ \hline \end{array}$$

$$\sqrt{X^2} = \sqrt{13}$$

$$X = \pm \sqrt{13}$$

$$\begin{array}{r}
 x^2 - 8 = 22 \\
 \hline
 x^2 = 30
 \end{array}$$

$$x = \pm \sqrt{5 \cdot 2 \cdot 3}$$

$$x = \pm \sqrt{30}$$

$$\begin{array}{r}
 30 \\
 \swarrow \searrow \\
 10 \quad 3 \\
 \swarrow \searrow \\
 5 \quad 2
 \end{array}$$

Solve the following

$$1) \sqrt{x^2} = \sqrt{125}$$

$$x = \pm 5\sqrt{5}$$

$$\sqrt{125}$$

$$25 \quad 5$$

$$5 \quad 5$$

$$2) x^2 - 64 = 0$$

$$\sqrt{x^2} = \sqrt{64}$$

$$x = \pm 8$$

$$\sqrt{64}$$

$$8 \quad 8$$

$$3) x^2 + 7 = 13$$

$$\begin{array}{r}
 x^2 + 7 = 13 \\
 \hline
 x^2 = 6
 \end{array}$$

$$x = \pm \sqrt{6}$$

$$\sqrt{6}$$

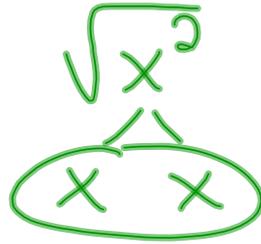
$$2 \quad 3$$

$$4) \quad 5x^2 + 8 = 28$$

$$\begin{array}{r} -8 \quad -8 \\ \hline 5x^2 = 20 \\ \hline \frac{5x^2}{5} = \frac{20}{5} \end{array}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

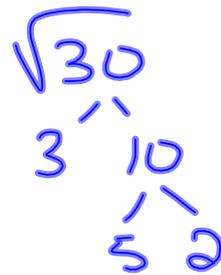


$$5) \quad 6x^2 - 5 = 175$$

$$\begin{array}{r} +5 \quad +5 \\ \hline 6x^2 = 180 \\ \hline \frac{6x^2}{6} = \frac{180}{6} \end{array}$$

$$\sqrt{x^2} = \sqrt{30}$$

$$x = \pm \sqrt{30}$$



$$\sqrt{3 \cdot 5 \cdot 2}$$

$$6) \sqrt{(x+5)^2} = \sqrt{9}$$

$$x+5 = \pm 3 \quad \begin{array}{l} -5+3 \\ -5-3 \end{array}$$

$$x = -5 \pm 3$$

$$x = -5 \pm 3 \begin{cases} \rightarrow -5+3 = -2 \\ \rightarrow -5-3 = -8 \end{cases}$$

$$x = -2 \text{ or } -8$$

$$7) \sqrt{(x-4)^2} = \sqrt{16}$$

$$x-4 = \pm 4 \quad \begin{array}{l} +4 \\ +4 \end{array}$$

$$x = 4 \pm 4 \begin{cases} \rightarrow 4+4 = 8 \\ \rightarrow 4-4 = 0 \end{cases}$$

$$x = 0 \text{ or } 8$$

$$8) \quad (3x+2)^2 - 5 = 25$$

$$\frac{\quad +5 \quad +5}{\sqrt{(3x+2)^2} = \sqrt{30}}$$

$$3x+2 = \pm \sqrt{30}$$

$$\frac{3x}{3} = -\frac{2 \pm \sqrt{30}}{3}$$

$$x = \frac{-2 \pm \sqrt{30}}{3}$$

$$9) \quad 4(6x-1)^2 - 5 = 223$$

$$\frac{4(6x-1)^2}{4} = \frac{228}{4}$$

$$\sqrt{(6x-1)^2} = \sqrt{57}$$

$$6x-1 = \pm \sqrt{57}$$

$$\frac{6x}{6} = \frac{1 \pm \sqrt{57}}{6}$$

$$x = \frac{1 \pm \sqrt{57}}{6}$$

$$\sqrt{57}$$

$$19 \quad 3$$

$$10) \quad 3x^2 + 7 = 10$$

$$\begin{array}{r} -7 \quad -7 \\ \hline \end{array}$$

$$\frac{3x^2}{3} = \frac{3}{3}$$

$$\sqrt{x^2} = \sqrt{1}$$

$$x = \pm 1$$

$$11) \quad \sqrt{(x+2)^2} = \sqrt{25}$$

$$\begin{array}{r} x+2 = \pm 5 \\ -2 \quad -2 \end{array}$$

$$\frac{x = -2 \pm 5}{\begin{array}{l} \rightarrow -2+5 = 3 \\ \rightarrow -2-5 = -7 \end{array}}$$

$$x = 3 \text{ or } -7$$

$$12) (3x+1)^2 = 16$$

$$\sqrt{(3x+1)^2} = \sqrt{16}$$

$$3x+1 = \pm 4$$

$$3x = -1 \pm 4 \quad \begin{array}{l} -1+4=3 \\ -1-4=-5 \end{array}$$

$$\frac{3x}{3} = \frac{3}{3} \text{ or } \frac{-5}{3}$$

$$x = 1 \text{ or } \frac{-5}{3}$$

$$13) 9(2m-3)^2 + 8 = 449$$

$$\frac{9(2m-3)^2}{9} = \frac{441}{9}$$

$$\sqrt{(2m-3)^2} = \sqrt{49}$$

$$2m-3 = \pm 7$$

$$\frac{+3 \quad +3}{2m = 3 \pm 7} \rightarrow \begin{array}{l} 3+7=10 \\ 3-7=-4 \end{array}$$

$$\frac{2m}{2} = \frac{10}{2}$$

$$m = 5$$

$$\frac{2m}{2} = \frac{-4}{2}$$

$$m = -2$$

$$14) \quad 3x^2 + 5 = 65$$

$$\begin{array}{r} -5 \quad -5 \\ \hline 3x^2 = 60 \end{array}$$

$$\frac{3x^2}{3} = \frac{60}{3}$$

$$\sqrt{x^2} = \sqrt{20}$$

$$x = \pm 2\sqrt{5}$$

$$\begin{array}{r} 20 \\ \diagdown \quad \diagup \\ 10 \quad 2 \\ \diagdown \quad \diagup \\ 5 \quad 2 \end{array}$$

$$15) \quad 6x^2 - 12 = 60$$

$$\begin{array}{r} +12 \quad +12 \\ \hline 6x^2 = 72 \end{array}$$

$$\frac{6x^2}{6} = \frac{72}{6}$$

$$\sqrt{x^2} = \sqrt{12}$$

$$x = \pm 2\sqrt{3}$$

$$\begin{array}{r} 12 \\ \diagdown \quad \diagup \\ 4 \quad 3 \\ \diagdown \quad \diagup \\ 2 \quad 2 \end{array}$$

$$16) \sqrt{(x-3)^2} = \sqrt{16}$$

$$x-3 = \pm 4$$

$$\begin{array}{r} +3 \quad +3 \\ \hline x = 3 \pm 4 \end{array} \rightarrow \begin{array}{l} 3+4=7 \\ 3-4=-1 \end{array}$$

$$x = -1 \text{ or } 7$$

$$17) 3(2x-5)^2 + 8 = 128$$

$$\frac{3(2x-5)^2 - 8}{3} = \frac{120}{3}$$

$$\sqrt{(2x-5)^2} = \sqrt{40}$$

$$2x-5 = \pm 2\sqrt{10}$$

$$\frac{2x}{2} = \frac{5 \pm 2\sqrt{10}}{2}$$

$$x = \frac{5 \pm 2\sqrt{10}}{2}$$

$$\begin{array}{c} 40 \\ \swarrow \quad \searrow \\ 4 \quad 10 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 2 \quad 2 \quad 5 \quad 2 \end{array}$$

