


Math II		Problems by Taking the Square Root of Both Sides	
1. $x^2 = 25$	7. $x^2 + 6 = 42$	13. $2x^2 - 7 = 43$	19. $(x-7)^2 - 6 = 43$
2. $x^2 = 1$	8. $4x^2 = 64$	14. $-4x^2 + 1 = -15$	20. $2(x-2)^2 = 2$
3. $x^2 = 0$	9. $x^2 + 4 = 3$	15. $\frac{1}{2}x^2 - 5 = 3$	21. $\frac{1}{3}(x+5)^2 - 1 = 2$
4. $x^2 = 45$	10. $x^2 + 3 = 4$	16. $-2x^2 + 2 = 4$	22. $(x-6)^2 + 5 = 4$
5. $x^2 = 120$	11. $x^2 + 9 = 16$	17. $5x^2 + 9 = 29$	23. $(x+2)^2 + 9 = 29$
6. $x^2 = -4$	12. $x^2 - 1 = 7$	18. $8x^2 - 17 = 7$	24. $4(x-10)^2 - 7 = 28$


  

1 $\sqrt{x^2} = \sqrt{25}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"><math>x = \pm 5</math></div> $5 \cdot 5 = 25$ $-5 \cdot -5 = 25$	2 $\sqrt{x^2} = \sqrt{1}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"><math>x = \pm 1</math></div>	3 $\sqrt{x^2} = \sqrt{0}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"><math>x = 0</math></div>
4	5	Created with Doceri 

<p>4 <math>\sqrt{x^2} = \sqrt{45}</math></p> <p><math>x = \sqrt{45}</math></p> <p style="text-align: center;"> <math>\begin{matrix} \wedge \\ 9 \cdot 5 \\ \wedge \\ 3 \cdot 3 \end{matrix}</math> </p> <p><math>x = \pm 3\sqrt{5}</math></p>	<p>5 <math>\sqrt{x^2} = \sqrt{120}</math></p> <p><math>x = \sqrt{120}</math></p> <p style="text-align: center;"> <math>\begin{matrix} \wedge \\ 60 \cdot 2 \\ \wedge \\ 30 \cdot 2 \\ \wedge \\ 15 \cdot 2 \end{matrix}</math> </p> <p><math>x = \pm 2\sqrt{30}</math></p>	<p>6 <math>\sqrt{x^2} = \sqrt{-4}</math></p> <p><math>x = \sqrt{-4}</math></p> <p><b>No solution</b></p>
<p>7 <math>x^2 + 6 = 42</math></p> <p style="text-align: center;"><math>\begin{matrix} -6 &amp; -6 \end{matrix}</math></p> <p><math>\sqrt{x^2} = \sqrt{36}</math></p> <p><math>x = \pm 6</math></p>	<p>8 <math>\frac{4x^2}{4} = \frac{64}{4}</math></p> <p><math>\sqrt{x^2} = \sqrt{16}</math></p> <p><math>x = \pm 4</math></p>	<p>9 <math>x^2 + 4 = 3</math></p> <p style="text-align: center;"><math>\begin{matrix} -4 &amp; -4 \end{matrix}</math></p> <p><math>\sqrt{x^2} = \sqrt{-1}</math></p> <p><math>x = \sqrt{-1}</math></p> <p><b>No solution</b></p>

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<p>10</p> $x^2 + 3 = 4$ $\begin{matrix} -3 & -3 \end{matrix}$ $\sqrt{x^2} = \sqrt{1}$ $x = \pm 1$	<p>11</p> $x^2 + 9 = 16$ $\begin{matrix} -9 & -9 \end{matrix}$ $\sqrt{x^2} = \sqrt{7}$ $x = \pm \sqrt{7}$	<p>12</p> $x^2 - 1 = 7$ $\begin{matrix} +1 & +1 \end{matrix}$ $\sqrt{x^2} = \sqrt{8}$ $x = \sqrt{8}$ $x = \pm 2\sqrt{2}$
<p>13</p> $2x^2 - 7 = 43$ $\begin{matrix} +7 & +7 \end{matrix}$ $\frac{2x^2}{2} = \frac{50}{2}$ $\sqrt{x^2} = \sqrt{25}$ $x = \pm 5$	<p>14</p> $-4x^2 + 1 = -15$ $\begin{matrix} -1 & -1 \end{matrix}$ $\frac{-4x^2}{-4} = \frac{-16}{-4}$ $\sqrt{x^2} = \sqrt{4}$ $x = \pm 2$	<p>15</p> $\frac{1}{2}x^2 - 5 = 3$ $\begin{matrix} +5 & +5 \end{matrix}$ $\frac{\frac{1}{2}x^2}{\frac{1}{2}} = \frac{8}{\frac{1}{2}}$ $8 \cdot \frac{2}{1} = \frac{16}{1} = 16$ $\sqrt{x^2} = \sqrt{16}$ $x = \pm 4$
<p>16</p> $-2x^2 + 2 = 4$ $\begin{matrix} -2 & -2 \end{matrix}$ $\frac{-2x^2}{-2} = \frac{2}{-2}$ $\sqrt{x^2} = \sqrt{-1}$ $\text{No Solution}$	<p>17</p> $5x^2 + 9 = 29$ $\begin{matrix} -9 & -9 \end{matrix}$ $\frac{5x^2}{5} = \frac{20}{5}$ $\sqrt{x^2} = \sqrt{4}$ $x = \pm 2$	<p>18</p> $8x^2 - 17 = 7$ $\begin{matrix} +17 & +17 \end{matrix}$ $\frac{8x^2}{8} = \frac{24}{8}$ $\sqrt{x^2} = \sqrt{3}$ $x = \pm \sqrt{3}$

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<p>19 <math>(x-7)^2 - 6 = 43</math>  <math>+6 \quad +6</math>  <math>(x-7)^2 = 49</math>  <math>x-7 = \pm 7</math>  <math>x-7 = 7</math>      <math>x-7 = -7</math>  <math>+7 \quad +7</math>      <math>+7 \quad +7</math>  <math>x = 14</math>      <math>x = 0</math></p>	<p>20 <math>\frac{2(x-2)^2}{2} = \frac{2}{2}</math>  <math>(x-2)^2 = 1</math>  <math>x-2 = \pm 1</math>  <math>+2 \quad +2</math>  <math>x = 1+2</math>      <math>x = -1+2</math>  <math>x = 3</math>      <math>x = 1</math></p>	<p>21 <math>\frac{1}{3}(x+5)^2 - 1 = 2</math>  <math>+1 \quad +1</math>  <math>\frac{1}{3}(x+5)^2 = 3</math>  <math>\frac{1}{3} \quad \frac{1}{3}</math>  <math>(x+5)^2 = 9</math>  <math>x+5 = \pm 3</math>  <math>x+5 = 3</math>      <math>x+5 = -3</math>  <math>x = -2</math>      <math>x = -8</math></p>
<p>22 <math>(x-6)^2 + 5 = 4</math>  <math>-5 \quad -5</math>  <math>(x-6)^2 = -1</math>  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">             NO SOLUTION         </div></p>	<p>23 <math>(x+2)^2 + 9 = 29</math>  <math>-9 \quad -9</math>  <math>(x+2)^2 = 20</math>  <math>4 \cdot 5</math>  <math>x+2 = \pm 2\sqrt{5}</math>  <math>-2 \quad -2</math>  <div style="border: 1px solid green; padding: 5px; width: fit-content; margin: 10px auto;"> <math>x = -2 \pm 2\sqrt{5}</math> </div></p>	<p>24 <math>4(x-10)^2 - 7 = 28</math>  <math>+7 \quad +7</math>  <math>4(x-10)^2 = 35</math>  <math>4 \quad 4</math>  <math>(x-10)^2 = \frac{35}{4}</math>  <math>x-10 = \pm \sqrt{\frac{35}{4}}</math>  <math>+10 \quad +10</math>  <math>x = 10 \pm \frac{\sqrt{35}}{2}</math></p>