MAT 1340

18/50

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1. $x^2+7x-18$

$a=1, b=7, c=18$

$$\frac{-7\pm\sqrt{72-4(1)(-18)}}{2(1)} \rightarrow \frac{-7\pm\sqrt{49-(-72)}}{2} \rightarrow \frac{-7\pm\sqrt{121}}{2}$$

Solve for b^2-4ac and plug it in here

"need to have $x=-9,2$"

$$\frac{-7+11}{2}=\frac{4}{2}=2 \qquad \frac{-7-11}{2}=\frac{-18}{2}=-9$$

$A=2, x=-9$

(-2)

2. $5.89x^2-13.09x+7.26=0$

$a=5.89 \quad b=13.09 \quad c=7.26$

$$\frac{13.09\pm\sqrt{-13.09^2-4(5.89)(7.26)}}{-2(5.89)}$$

$$\frac{-13.09\pm\sqrt{-13.09-4(5.89)(7.26)}}{2(5.89)}$$

$x\neq 1.1579, 1.0645$

$\approx$ b/c it's not exact

How?!

8. $x^2-24x-9$

$x^2-24x-9=0$

$x=12\pm\sqrt{17}$

$x=12-\sqrt{17}$

(-3)

(-2)

3. $25x^2-20x+7=0$

$a=25 \quad b=-20 \quad c=2$

$$\frac{20\pm\sqrt{-20^2+4(25)(7)}}{2(25)}$$

$$\frac{-20\pm\sqrt{400+700}}{50}$$

$$\frac{20+\sqrt{100}}{50} \rightarrow \frac{20+\sqrt{1100}}{50}=300 \qquad \frac{-20+\sqrt{1100}}{50}=-300$$

$x=\frac{20+\sqrt{1100}}{50}, \frac{-20+\sqrt{1100}}{50}$

$x=\frac{2\pm i\sqrt{3}}{5}$

(-4)

9. $5x^2+2x+3=0$

$a=5, b=2, c=3$

$$x=\frac{-2\pm\sqrt{2^2-4\cdot 5\cdot 3}}{2\cdot 5} \qquad x=\frac{-2\pm\sqrt{-56}}{10}$$

$x=\frac{-2\pm\sqrt{4-60}}{10}$

$x\notin\mathbb{R}$ Complete the square, not quad.

(-4)

4. $3Mx^2-2\omega x+5r=0$

$$\frac{2\omega\pm\sqrt{-2\omega^2-4(3M)(5r)}}{2(3M)} \rightarrow \frac{-2\omega\pm\sqrt{4\omega^2-24Mr}}{6M}$$

$x=\frac{2\omega\pm\sqrt{4\omega^2-240Mr}}{}$, $\frac{2\omega-\sqrt{4\omega^2-240Mr}}{}$

No room for 6M notes

$ax=3M, bx=2\omega x, c=5r=0$

(-3)

5. $x^2+7x-18=0$

$a+b=7 \quad a\cdot b=18$

$x^2+9x-2x-18$

$(x+9)(x-2) \quad x=-9, 2$

(-3)

6. $\frac{589x^2-1309x+726=0}{589} \rightarrow x^2-\frac{1309}{589}+\frac{726}{589}=0$

(-4)

$(31x-33)(19x-22)=0$

$(x+\frac{7}{2})^2=18+\frac{49}{4}=\frac{121}{4} \quad x_2=\frac{-7}{4}$

$(x+7/2)^2=\frac{121}{4} \quad x=\frac{\sqrt{32}}{4}$

10. $4x^2-16x+11=0$

$a=4, b=-16, c=11$

$$x=\frac{-16\pm\sqrt{-16^2-4\cdot 4\cdot 11}}{2\cdot 4}$$

$$x=\frac{16\pm\sqrt{256-176}}{8}$$

Complete the square

7. $x^2+7x-18=0$

$+18 \quad +18$

$x^2+7x=18$

$(x+\frac{7}{2})^2 \rightarrow \frac{49}{4}$

$x^2+7x+\frac{49}{4}=18+\frac{40}{4}$

$$x=\frac{16\pm\sqrt{80}}{8} \rightarrow x=\frac{16\pm 4\sqrt{5}}{8}; \quad x=\frac{4+\sqrt{5}}{2}, \quad x=4-\frac{\sqrt{5}}{2}$$

$x=\frac{4\sqrt{5}}{2}$, $x_2=4+\frac{\sqrt{5}}{2}$

(-2)

(-3)

Taryn,

This being the first one, I tried to grade this as fully as possible. Please be aware that going forward, I will not grade work that is formatted in this way.

A few tips:

- leave yourself plenty of room
- work in a single column, from top → bottom
- leave a little space between lines for you and others to make notes/changes.

Thank You!

Have a great day!