The Good

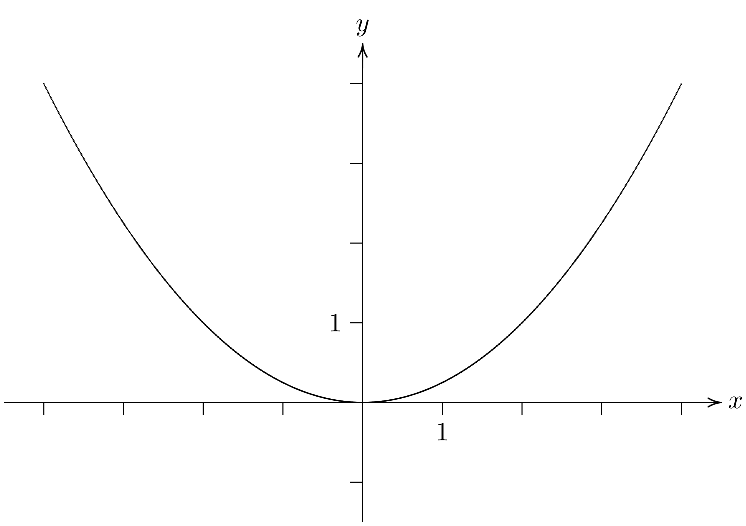
Perform the indicated operation and simplify: $\dfrac{2x+3}{x-\sqrt{2}} - \dfrac{x^2+1}{3}$.

$$
\begin{aligned}
\text{Now,}\quad \frac{2x+3}{x-\sqrt{2}} - \frac{x^2+1}{3} &= \frac{3(2x+3)}{3(x-\sqrt{2})} - \frac{(x^2+1)(x-\sqrt{2})}{3(x-\sqrt{2})} \\
&= \frac{3(2x+3) - (x^2+1)(x-\sqrt{2})}{3(x-\sqrt{2})} \\
&= \frac{6x+9-(x^3-(\sqrt{2})x^2+x-\sqrt{2})}{3(x-\sqrt{2})} \\
&= \frac{6x+9-x^3+(\sqrt{2})x^2-x+\sqrt{2})}{3(x-\sqrt{2})} \\
&= \frac{-x^3+(\sqrt{2})x^2+5x+(9+\sqrt{2})}{3(x-\sqrt{2})}.
\end{aligned}
$$

Comments:

- Note that the equal signs *neatly* lined up and on the same level as the fraction bars of the fractions.
- Note that each step is a single simplification. Multiple simplifications carried out in the same step can easily lead to confusion and, worse, errors.
- Note how the terms in the numerator have been collected in decending degree.
- Note the parentheses around the "$\sqrt{2}$" to emphasize that it is the coefficient of x^2 *and* to make sure that the x^2 is not accidentially placed under the radical along with the 2.
- Note that the denomenator has been left in *factored form* and, furthermore, GASP!!, a radical has been left in the denominator.

Graph $y = \dfrac{1}{4}x^2$.



Comments:

- Note that the axes are labeled and arrows appear ONLY in the positive direction.
- Note that the tick marks are *evenly* spaced and that the scales on the two axes *agree*.
- Note that the tick marks have been *minimally labeled*.
- Note that the ends of the graph do NOT have arrows – the graph is *assumed* to continue indefinitely.
- Note that the graph is not tiny.
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