

These are questions I thought up sitting in the Toyota waiting room, Friday afternoon. Now to review notes and homework for more ideas, but this is most of the things that occurred to me on reflection.

1. Simplify $5 - 2(3x - 5) + 7(2 - 3x)$
2. Multiply
 - a. $3(2x^2)(2x + 3)(6x - 2)$
 - b. $(3x - 2)(2x^2 - 3x + 7)$
3. Evaluate $b^2 - 4ac$ if $a = 3, b = -7,$ and $c = 11$
4. Write $\frac{2310}{660}$ in lowest terms.
5. Simplify $\sqrt{37800}$ without using a calculator.
6. Factor, if possible:
 - a. $x^2 - 3x - 10$
 - b. $9x^2 - 16$
7. Simplify. Assume all variables represent nonzero real numbers. Your final answer should contain only positive exponents.
 - a. $(a^2b^{-3})(a^{-5}b^2)$
 - b. $(a^2b^{-3})^{-2}(a^{-5}b^2)^4$
 - c. $\frac{3^4x^5y^{-2}}{9x^{-3}y^{-7}}$
 - d. $\frac{(6x^2y^3)^{-2}}{(15x^{-2}y^{-5})^4}$
8. Consider the equation $ax^2 + bx + c = 0$. Write the discriminant.



Bonus stuff

Factor each of the following, if possible:

1. What's the solution of the equation $ax^2 + bx + c = 0$?
2. $168x^2 + 326x - 165$
3. $x^3 - 64$
4. $27x^6 + 125y^6z^9$
5. $9x^2 + 16y^2$
6. $9x^2 - 16y^2z^{14}$

Mega-Bonus: Factor $x^2 - 4x + 1$