

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. $3(2x^2)$ - new in this revision (There was a typo on this and the next in the 1st)
 - b. $(2x + 3)(6x - 2)$ - new in this revision
 - c. $(3x - 4y)^2$ - new in this revision
 - d. $(3x - 2)(2x^2 - 3x + 7)$
3. Evaluate $b^2 - 4ac$ if $a = 3, b = -7,$ and $c = 11$
4. Factor 44,100 into the product of powers of primes. - new in this revision
5. Write $\frac{2310}{660}$ in lowest terms.
6. Find the next term in the sequence - new in this revision
 - a. -2, 3, 8, ...
 - b. 20, 10, 5, ...
7. A store sells radios at a price, p . The store owner has found that the number of radios sold, x , is related to price by the following equation: $x = 1200 - p$. Give the equation for the revenue, entirely in terms of the price variable. - new in this revision
8. Simplify $\sqrt{37800}$ without using a calculator.
9. Simplify $2 + 3[(5 - 2) - (5 + 7)]$ - new in this revision
10. Factor. if possible:
 - a. $30a^3b^4 + 20a^4b^3$
 - b. $x^2 - 3x - 10$
 - c. $9x^2 - 16$
11. Solve the equation $8x - 2 = 6x - 10$ - new in this revision.
12. Add $\frac{9}{16} + \left(-\frac{5}{12}\right)$
13. Graph the equation $y = 2x - 1$
14. Convert 70 miles per hour into units of feet per second.
15. 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. $\frac{(6x^2y^3)^{-2}}{(15x^{-2}y^{-5})^4}$

16. Consider the equation $ax^2 + bx + c = 0$. Write the discriminant.



Bonus stuff

Factor each of the following, if possible:

1. $8x^2 + 14x - 12x - 21$ - new in this revision
2. $168x^2 + 326x - 165$
3. $x^3 - 64$
4. $6x^2 - 55x + 9$
5. $27x^6 + 125y^6z^9$
6. $9x^2 + 16y^2$
7. $9x^2 - 16y^2z^{14}$
8. What's the solution of the equation $ax^2 + bx + c = 0$?
9. What condition must the discriminant satisfy in order for the above equation to factor by 'ac' method? - new in this revision
10. What is the situation when the discriminant turns out to be zero? - new in this revision
11. Use Pascal's triangle to expand $(2x - 5y)^4$
12. Factor $x^2 - 4x + 1$ (It doesn't factor over the rationals! Your 'ac' method won't work!).
13. What's $\sqrt{-1}$? - new in this revision
14. Give an example of "Powers distribute over products." - new in this revision
15. Give an example of "Products distribute over sums." - new in this revision