If we differentiate $x^p$ we obtain $p.x^{p-1}$, and if we differentiate $a.x^p$ we get $a.p.x^{p-1}$ (when $a$ and $p$ are numbers).

1. $6x^{6-1} = 6x^5$.
2. $60x^{60-1} = 60x^{59}$.
3. $20x^{20-1} = 20x^{19}$.
4. $(-4).x^{-4-1} = -4x^{-5}$.
5. $3.(-2).x^{-2-1} = -6x^{-3}$.
6. $2.(-12).x^{-12-1} = -24x^{-13}$.
7. $\frac{9}{2}x^{(9/2)-1} = \frac{9}{2}x^{7/2}$.
8. $\frac{1}{4}.1.x^{1-1} = \frac{1}{4}x^0 = \frac{1}{4}$.
(Or remember that if we differentiate $mx$ then we get $m$.)
9. $4.(-\frac{1}{2}).x^{(-1/2)-1} = -2x^{-3/2}$.
10. $\frac{1}{3}.x^{(1/3)-1} = 2x^{-2/3}$.

To differentiate a sum of expressions, differentiate each term, then add.

11. $2x^{2-1} + 5 + 0 = 2x + 5$ (remember that differentiating a constant gives 0).
12. $3x^{3-1} + 4.2.x^{2-1} - 3 + 0 = 3x^2 + 8x - 3$.
13. $2.4.x^{4-1} + 3.(-2).x^{-2-1} + \frac{1}{2}x^{(1/2)-1} = 8x^3 - 6x^{-3} + \frac{1}{2}x^{-1/2}$.
14. Multiply out. We want to differentiate $x^4 + 2x^3$, and we get $4x^3 + 2.3.x^2 = 4x^3 + 6x^2$.
15. $\sqrt{x}$ is the same as $x^{1/2}$ so we get $\frac{1}{4}x^{(1/4)-1} = \frac{1}{4}x^{-3/4}$.
16. Using the hint, we differentiate $4x^2 + 1 + 2x^{-2}$ to get $4.2.x^{2-1} + 0 + 2.(-2).x^{-2-1}$, which is equal to $8x - 4x^{-3}$.
17. Differentiate $-2x^{5/2}$ to get $-2.(\frac{5}{2}).x^{(5/2)-1} = -5x^{3/2}$.