Calculus: Finding the Power Rule Form

Step 1: Cut out all the pieces below, then match up the ones that represent the same expression. There are four "whammies" that do not match up with anything.

Step 2: Find the tile in each pair in which every term is of the form ax^n. This is the form where you can directly apply the power rule for derivatives.

$2x^{-3}+x^{-2}$	$\left(2x+\sqrt{x}\right)^2$	$2\sqrt[5]{x}$	$4\left(2x\right)^{-1}$
$2x^{-1/2}+x^{3/2}$	$x^2\left(2\sqrt{x}+x\right)$	$2x+x^{-2}$	$\dfrac{8x^3+4x^{-1}}{4x^2}$
$\dfrac{1}{2x^3+x^2}$	$\left(2x\right)^{-5}$	$2x^{-1}$	$\dfrac{2}{x^5}$
$2x^{1/5}$	$4x^2+4x^{3/2}+x$	$\dfrac{2}{x^3}+\dfrac{1}{x^2}$	$\dfrac{2}{x}+\sqrt{x^3}$
$2x^{5/2}+x^3$	$2x^{1/2}\left(x^{-1}+x^{1/2}\right)$	$\sqrt{x}\left(\dfrac{2}{x}+x\right)$	$2x+x^{-3}$
$2x^{-1}+x^{3/2}$	$\dfrac{1}{32}x^{-5}$	$1+x^{3/2}$	$2x^{-5}$
$\dfrac{x+2x^3}{x^2}$	$2x^{-1/2}+2x$	$2x+x^{-1}$	$4x^2+x$

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Answer Key:

$2x^{-3}+x^{-2}$	$\left(2x+\sqrt{x}\right)^2$	$2\sqrt[5]{x}$	$4(2x)^{-1}$
$2x^{-1/2}+x^{3/2}$	$x^2\left(2\sqrt{x}+x\right)$	$2x+x^{-1}$	$\frac{8x^3+4x^{-1}}{4x^2}$
$\frac{1}{2x^3+x^2}$	$(2x)^{-5}$	$2x^{-1}$	$\frac{2}{x^5}$
$2x^{1/5}$	$4x^2+4x^{3/2}+x$	$\frac{2}{x^3}+\frac{1}{x^2}$	$\frac{2}{x}+\sqrt{x^3}$
$2x^{5/2}+x^3$	$2x^{1/2}\left(x^{-1}+x^{1/2}\right)$	$\sqrt{x}\left(\frac{2}{x}+x\right)$	$2x+x^{-3}$
$2x^{-1}+x^{3/2}$	$\frac{1}{32x^5}$	$1+x^{3/2}$	$2x^{-5}$
$\frac{x+2x^3}{x^2}$	$2x^{-1/2}+2x$	$2x+x^{-1}$	$4x^2+x$