This resource contains two packs of cards to play snap or pairs. The first page gives simple polynomials with positive integer indices, and the second page includes fractional and negative indices. You can use each page separately, or shuffle them together.

Note that some of the answers are very similar to prevent students guessing. Students need to be careful with whether they are looking at an equation or function.

Instructions

You will need one set of cards per pair of students. The cards are not given in any order so can be given to students to cut out, or you may prefer to laminate them in advance.

Notes on playing snap:
- One student takes the lettered cards (the original equations and functions), the other student takes the numbered cards (the derivatives).
- When a match is found, the winning player takes those cards and puts them to one side (instead of adding them to the bottom of their pile as with regular playing cards).
- When all the cards have been turned over, any remaining unmatched cards are picked up, reshuffled, and the game continues.
- The winner is the first player who collects five pairs.

Notes on playing pairs:
- All cards are shuffled together and spread out face down on the table. The game is usually quicker if cards are placed in a grid pattern, rather than randomly.
- Players take turns to turn over two cards. If they are a match, that player puts them to one side and has another go. If they do not match, the cards are turned back over and the next player takes their go.
- The winner is the player with the most pairs when all the cards have been matched.

There are interactive versions of both activities on **www.teachitmaths.co.uk** (Quick search: 20693) – ideal to project onto an interactive whiteboard or play in a computer suite.

Answers

A6	B1	C2	D5	E9	F7	G4	H10	I8	J3
K14	L15	M17	N12	O11	P13	Q19	R16	S20	T18

$y = 3x^2$	$y = 2x^3$	$\dfrac{dy}{dx} = 6x^2$	$f'(x) = 6x$
A	B	1	2
$f(x) = 3x^2 + 4$	$f(x) = 2x^3 + 5$	$f'(x) = 6x + 4$	$\dfrac{dy}{dx} = 6x + 5$
C	D	3	4
$y = 2x^3 + 5x$	$y = 2x^3 + 5x^2$	$f'(x) = 6x^2$	$\dfrac{dy}{dx} = 6x$
E	F	5	6
$y = 3x^2 + 5x$	$y = 5x + 2x^2$	$\dfrac{dy}{dx} = 6x^2 + 10x$	$f'(x) = 3$
G	H	7	8
$f(x) = 3x - 5$	$f(x) = 3x^2 + 4x$	$\dfrac{dy}{dx} = 6x^2 + 5$	$\dfrac{dy}{dx} = 4x + 5$
I	J	9	10

$y = \dfrac{1}{x}$	$x = y$	$\dfrac{dy}{dx} = 0.5x^{-0.5}$	$f'(x) = -6x^{-3}$
K	L	11	12
$y = 3x^{-2}$	$f(x) = 3x^{-2} + 3$	$f'(x) = -6x^{-3} + 3$	$\dfrac{dy}{dx} = -x^{-2}$
M	N	13	14
$y = \sqrt{x}$	$f(x) = 3x^{-2} + 3x$	$\dfrac{dy}{dx} = 1$	$\dfrac{dy}{dx} = 0.5$
O	P	15	16
$f(x) = 3x^2 + 5x + 1$	$2y = x$	$\dfrac{dy}{dx} = -6x^{-3}$	$f'(x) = 6x + 10$
Q	R	17	18
$f(x) = 3x^2 - 5x$	$f(x) = 3x^2 + 10x$	$f'(x) = 6x + 5$	$f'(x) = 6x - 5$
S	T	19	20