True or False

To address some common misconceptions about indices, the following activity can be used.

This activity can be done with the whole class.

As each card is held up, or appears on an interactive whiteboard, students decide whether the statement is true or false.

Students are then required to justify their answer.

Alternatively, groups can discuss the statement then each group holds up a true or false card.

$x\sqrt{x} = x^{\frac{3}{2}}$	$\frac{x^2 + x^4}{x^3} = x^2 + x$
$\frac{1}{x^3} = x^{-3}$	$(x^2)^3 = x^5$
$x^2 + x^4 = x^6$	$(\sqrt{x})^4 = x^2$
$\frac{1}{x^{-1}} = x$	$x^0 = 0$
$\frac{\sqrt{x}}{x} = x^{\frac{1}{2}}$	$8^{\frac{2}{3}} = 4$
$2^{-3} = -6$	$25^{\frac{1}{2}} = 5$

$16^{\frac{1}{2}} = \frac{1}{16}$	$27^{\frac{1}{3}} = 9$
$3^{-2} = -9$	$\left(\frac{1}{4}\right)^{-1} = 4$
$36^{-\frac{1}{2}} = \frac{1}{6}$	$3^{-1} = \frac{1}{3}$
$x^2 \times x^4 = x^8$	$x^5 \div x^3 = x^2$
$\left(\sqrt{3}\right)^2 = 3$	$2 \times 3^2 = 36$
$\frac{5^3}{5^4} = 5^{-1}$	$\sqrt{x} = x^{\frac{1}{2}}$