

# Unit 2: Analyzing Polynomial and Rational Functions

## 2.1 Variation

I can:

1. Write and solve problems involving direct, inverse and joint variations.



"I find if you put that slash through the equal sign, the number of possible answers vastly increases."

# After you finish your quiz...

Grab a chromebook

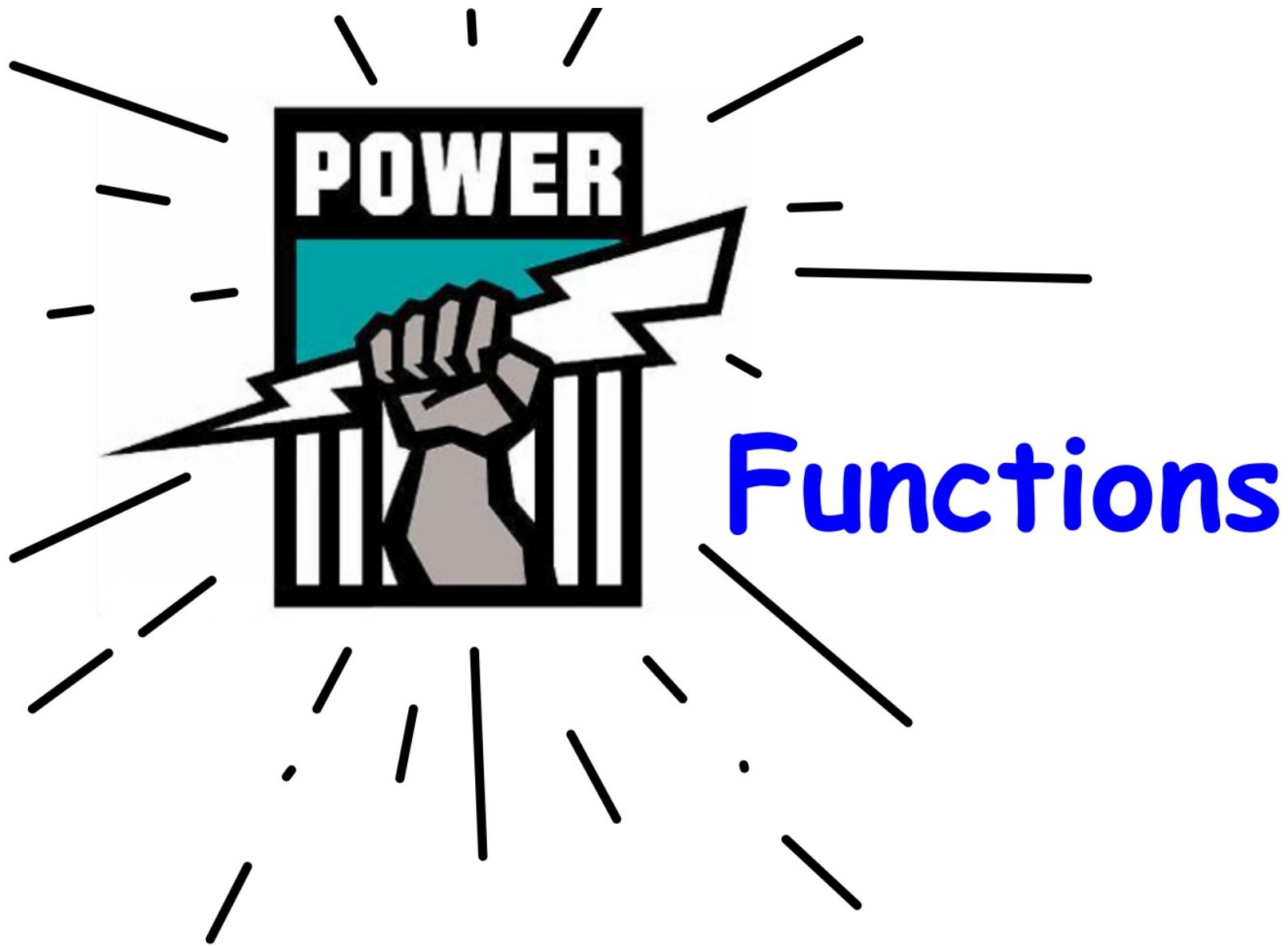
Log in to schoolnet through ncedcloud

Scroll down to Review Assessments

Click on Unit 0

Click on the numbers of the questions  
at were incorrect to view the correct answers

For corrections, show all work to the  
correct answer on a separate sheet of paper and  
explain in 2 to 4 sentences  
how to properly solve the problem.



**Functions**

Power Function: A function of the form,

$$f(x) = k \cdot x^n$$

Where  $k$  is a constant of proportionality and

$n$  is an integer such as  $\pm 1, \pm 2, \pm 3, \text{ etc.}$

Many of the most common formulas from geometry and science are power functions:

Name	Formula	Power	Constant of Variation
Circumference	$C = 2\pi r$	1	$2\pi$
Area of a circle	$A = \pi r^2$	2	$\pi$
Force of gravity	$F = k/d^2$	-2	$k$
Boyle's Law	$V = k/P$	-1	$k$

positive powers = direct variation

negative powers = inverse variation



# Analyzing Power Functions

**Ex 1:** State the power and constant of variation for the function  $f(x) = \sqrt[4]{x}$ .

Ex 2: Write the following equations in the form  $\underline{k \cdot x^a}$  using a single rational number for the power of  $a$  and state the constant of proportionality.

$$f(x) = \sqrt{16x^3}$$

constant of prop. =  
power =

$$g(x) = \sqrt[3]{\frac{x}{27}}$$

constant of prop. =  
power =

Ex 3: Write a formula for the power function represented by the table. Show all work.

x	-2	-1	0	1	2
y	32	4	0	-4	-32