

2.5 Direct variation with powers

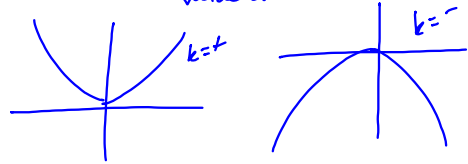
$y = kx$ $k = \text{variation constant}$

C, SA, V

$C = \pi d$ $SA = \pi r^2$ $V = \frac{4}{3} \pi r^3$

Direct Variation with squares

$y = kx^2$
graphically
value of k

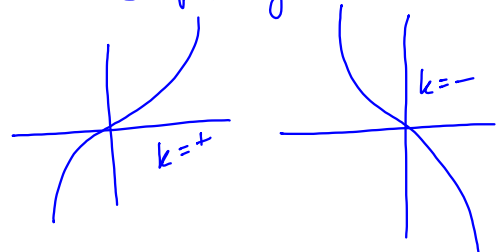


Solving for a variable

$L = 4 \cdot t^2$ find t when $L = 16$
 $16 = 4 \cdot t^2$ find L when $t = 3$
 $\frac{16}{4} = \frac{4 \cdot t^2}{4}$ $L = 4 \cdot (3)^2$
 $\sqrt{4 \cdot t^2}$ $L = 4 \cdot 9$
 $z = z$ $L = 36$

Direct-Variation with cubes

Graphically



y varies directly with x
 $\hookrightarrow y = kx$
 y varies directly with the square of x
 $y = kx^2$
 y varies directly with the cube of x
 $y = kx^3$

y varies directly with square of x . find the variation constant when $y = 18$ and $x = 3$

$18 = k(3)^2$ $y = 2x^2$
 $\frac{18}{9} = \frac{k \cdot 9}{9}$ find y when $x = 10$
 $2 = k$ $y = 2(10)^2$
 $y = 2(100)$
 $y = 200$