

## CE 311K - McKinney

### HW-10 Curve Fitting

1. Given the data

$x$	5	10	15	20	25	30	35	40	45	50
$y$	16	25	32	33	38	36	39	40	42	42

Use least-squares regression to fit the following equations to the data in the table above (Compare your results by preparing a plot of the data and each of your equations on a single graph using Excel).

(a) a straight line:  $y_i = a_0 + a_1x_i$

(b) a parabola:  $y_i = a_0 + a_1x_i + a_2x_i^2$

(c) a power equation:  $y = ax^b$ ; and

(d) a saturation-growth-rate equation:  $y = a\frac{x}{b+x}$