1 2 3

Example 8

Determine the polynomial function corresponding to each graph. You may leave your answer in factored form.

Finding a Polynomial From its Graph

a)

(0, 4)

b)

(0, -1)

Example 9 Determine the polynomial function corresponding to each graph. You may leave your answer in factored form.

Finding a Polynomial From its Graph

a)

(2, -6)

b)

$$\left(4, -\frac{15}{2}\right)$$

Polynomial, Radical, and Rational Functions
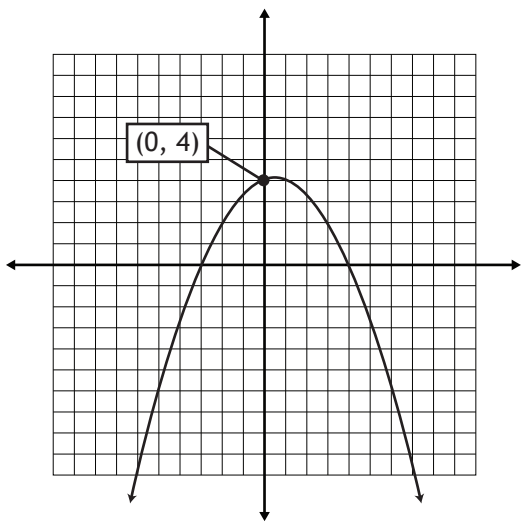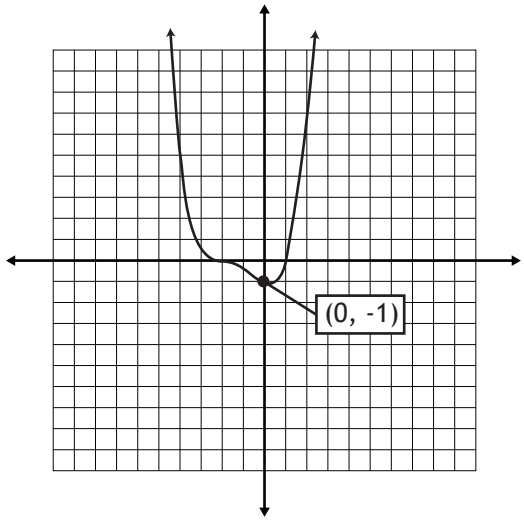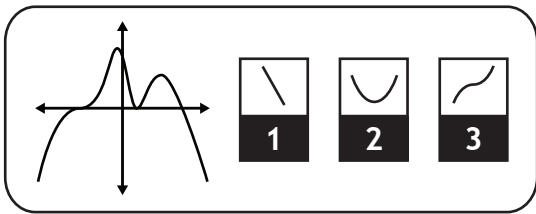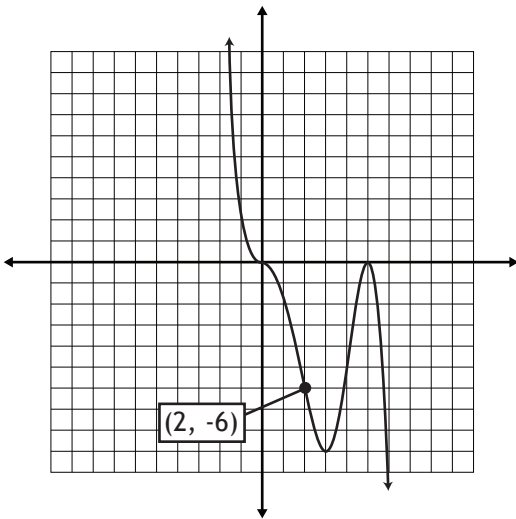## LESSON ONE - *Polynomial Functions*
Lesson Notes

| 1 | 2 | 3 |

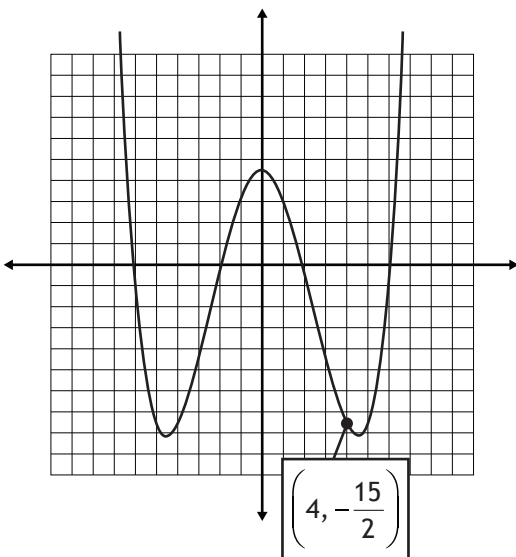**Example 10**   Determine the polynomial function corresponding to each graph. You may leave your answer in factored form.

Finding a Polynomial From its Graph

a)
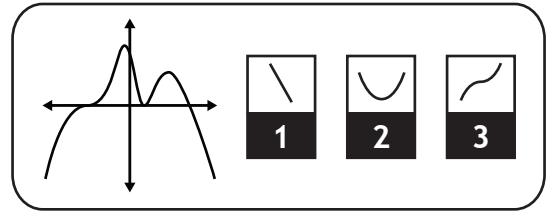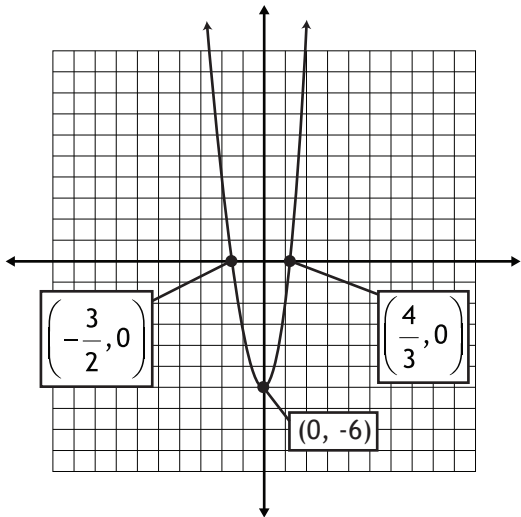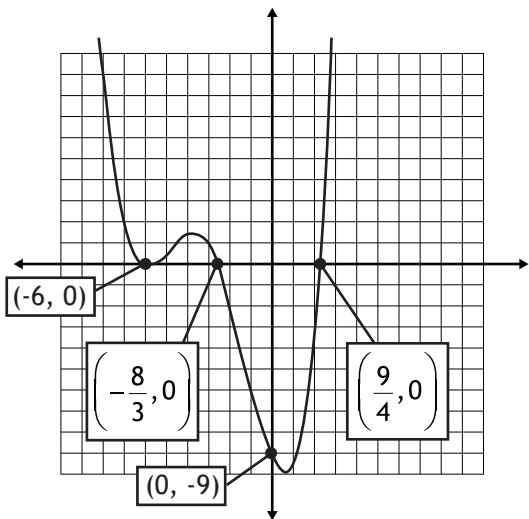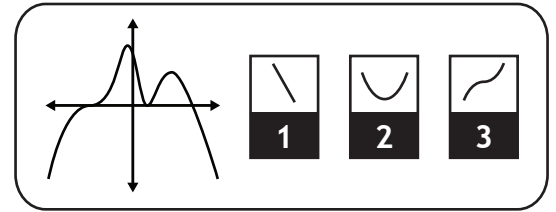
$\left(-\dfrac{3}{2}, 0\right)$

$\left(\dfrac{4}{3}, 0\right)$

$(0, -6)$

b)

$(-6, 0)$

$\left(-\dfrac{8}{3}, 0\right)$

$\left(\dfrac{9}{4}, 0\right)$

$(0, -9)$

Polynomial, Radical, and Rational Functions
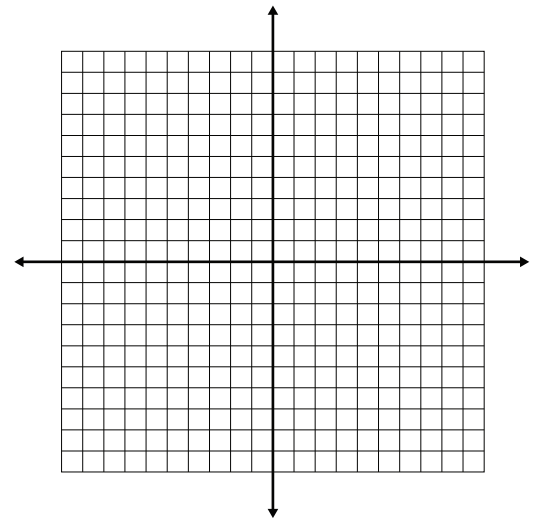## LESSON ONE - *Polynomial Functions*
Lesson Notes

| 1 | 2 | 3 |

Example 12 — Given the characteristics of a polynomial function, draw the graph and derive the actual function.

Graph and Write the Polynomial

a) Characteristics of P(x):

x-intercepts: (-1, 0) and (3, 0)
sign of leading coefficient: (+)
polynomial degree: 4
relative maximum at (1, 8)

b) Characteristics of P(x):

x-intercepts: (-3, 0), (1, 0), and (4, 0)
sign of leading coefficient: (-)
polynomial degree: 3

y-intercept at: $\left(0, -\dfrac{3}{2}\right)$