

1.1 Graphs and Models (Day 2)

Symmetry: For a polynomial in the form
 $y = ax^m + bx^n + \dots + c$

* If each term (x) has an EVEN exponent, the graph will be symmetric to: y-axis

Even Function

* If each term (x) has an ODD exponent, the graph will be symmetric to: origin

Odd Function

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System of Equations - find the points of intersection

1. Addition Method - cancellation

* Might multiply to be able to eliminate one of the variables.

* Best if 1st degree equations

2. Substitution Method -

Solve for one variable and substitute in the other equation.

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Ex: 1. $2a = 3b$
 $\frac{2}{3}a - \frac{1}{2}b = 2$

$$\begin{array}{r} \xrightarrow{\times 6} 2a - 3b = 0 \\ \xrightarrow{\times 6} 4a - 3b = 12 \\ \hline -2a = -12 \\ a = 6 \end{array}$$

$2a = 3b$
 $2(6) = 3b$
 $12 = 3b$
 $4 = b$

$a = 6$
 $b = 4$

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2. $x^2 + y^2 = 25$
 $2x + y = 10 \Rightarrow y = 10 - 2x$

$$\begin{aligned} x^2 + (10 - 2x)^2 &= 25 \\ x^2 + (10 - 2x)(10 - 2x) &= 25 \\ x^2 + 100 - 20x - 20x + 4x^2 &= 25 \\ 5x^2 - 40x + 75 &= 0 \\ 5(x^2 - 8x + 15) &= 0 \\ 5(x - 3)(x - 5) &= 0 \\ x - 3 = 0 & \quad x - 5 = 0 \\ x = 3 & \quad x = 5 \end{aligned}$$

$x = 3$
 $2(3) + y = 10$
 $y = 10 - 6$
 $y = 4$

$x = 5$
 $2(5) + y = 10$
 $y = 0$

$(3, 4)$ and $(5, 0)$

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HOMEWORK

pg 8 - 9; 23, 25, 29, 33, 35, 37,
61 - 69 odd

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