GEOMETRIC FUNCTIONS SUMMARY

Definitions:

Function a relation where each value of the independent variable corresponds with only one value of the dependent variable

Relation a set of ordered pairs, values of the independent variable are paired with values of the dependent variable

Domain values of the independent variable (x)

Range values of the dependent variable (y)

Function Notation f(x) = y

Parent Function simplest form of the function (without shifts)

Absolute Value distance from 0; |5| = |-5| = 5

Asymptote line the gets closer and closer to a value, but never meet it. i.e. 2^{-x} approaches 0

Rational Numbers numbers that can be expressed as a fraction

Irrational Numbers numbers that can *not* be expressed as a fraction $\sqrt{2}$ or $\prod$

Real Numbers either rational and irrational numbers

Inverse Function reverse of the original function; undoes what the original function did.

Definition of a function

A function is a relation between a set of inputs and a set of permissible outputs with the property that each input is related to exactly one output. *X can only resolve to a single Y value.*

f(x) = y

Inverse Functions

The inverse function is the anti-function. It resolves y back to x.

f(x) = y = 2-5x

Then the inverse function is $f^{-1}(y) = x$

Question: check the function f(x) = 5x – 2 if, x = 4. and find the inverse function.
Solution:

Function	*Inverse Function*
f(x) = y = 5x – 2 *f(4) = 5 × 4 – 2* *f(4) = 18*	*y = 5x – 2* *Solve for x:* *x = (y+2)/5* *$f^{-1}(x) = x = (y+2)/5$* *$f^{-1}(18) = (18+2)/5$* *$f^{-1}(18) = 4$*

Domain and Range

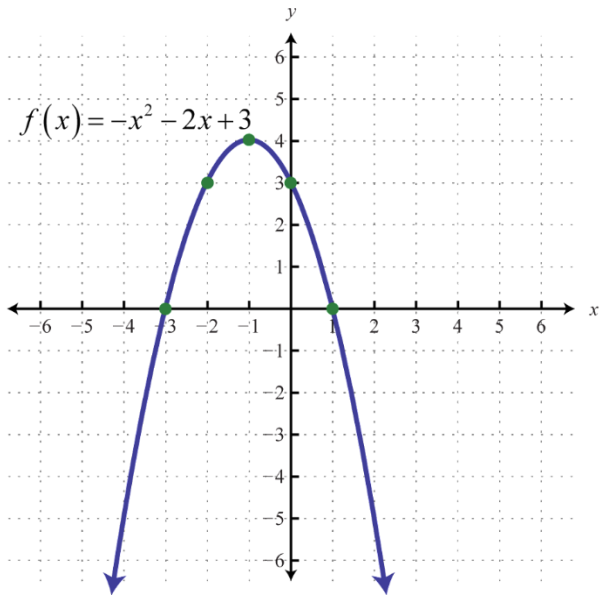
Domain *– All of the values that go into a relation or a function are called the domain.*

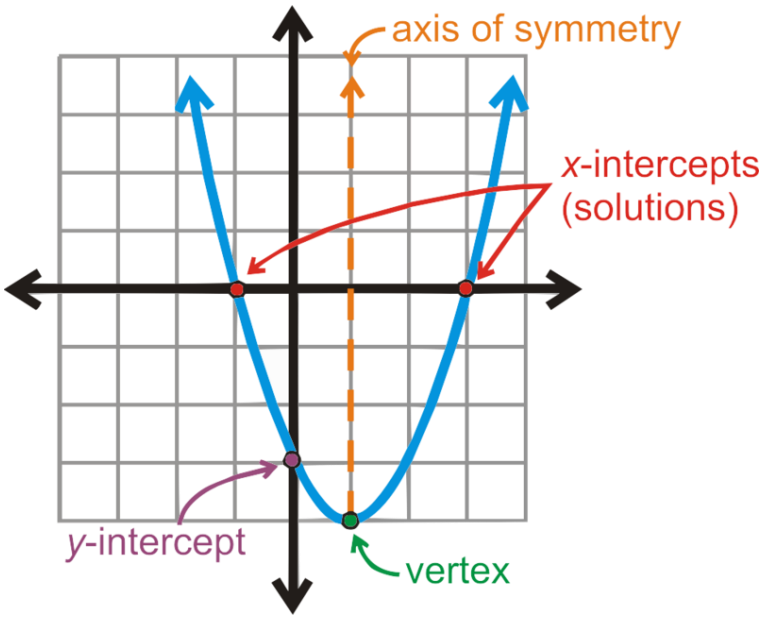
$D: \{x \mid x \in \mathbb{R}\}$

Range *– All of the entities (**output**) which emerge from a relation or a function are called the range.*

R: {y | y ≥ 0}

Graphing Quadratics (Parabolas)





Graphing Exponentials