

Choose a seat. Choose wisely as these people will be part of your group for the next 3 weeks.

Prerequisite Skills:

Factor

Functions

- Domain & Range
- Graph: With and without a calculator
- Identify key features

Solve equations: linear, quadratic, polynomial, exponential, trig, & logarithmic

Trig

- Unit circle
- Basic trig identities

A $x^3 + 27$

B $x^3 - 2x - 4$

C $x^3 + 3x^2 - x - 3$

D $5(x^2 + 4)^4(2x)(x - 2)^4 + (x^2 + 4)^5(4)(x - 2)^3$

E $3x^{-1/2} + 4x^{1/2} + x^{3/2}$



F $f(x) = |2x - 1|$

Describe as a piecewise function
with domain identified

G If $f(x) = 1 + x^2$ and $g(x) = 2x - 1$, find the following functions and state the domain of the composed function.

fg

$f(g(x))$

H State the domain and range of the given function then find the inverse

$f(x) = x^2 - 3 \quad x \geq 0$



Sketch the graph of the given polynomial functions. Identify the end behavior and label all intercepts and approximate max and min values. (You must be able to do this without a calculator!)

I $P(x) = x^3 - x^2 - 8x + 12$

J $R(x) = \frac{2x+4}{x^2+x-2}$



K $\log_5 x + \log_5 (x+1) = \log_5 20$

L $e^{2x+1} = 200$



M A contractor purchases a piece of equipment for \$36,500 that costs an average of \$9.25 per hour for fuel and maintenance. The equipment operator is paid \$13.50 per hour, and customers are charged \$30 per hour.

- Write an equation for the cost C of operating this equipment for t hours.
- Write an equation for the revenue R derived from t hours of use.
- Find the break-even point for this equipment by finding the time at which $R = C$.

Of the prerequisite skills, which are your strongest? your weakest?

What will you do to ensure you can be successful?

What are your concerns?