

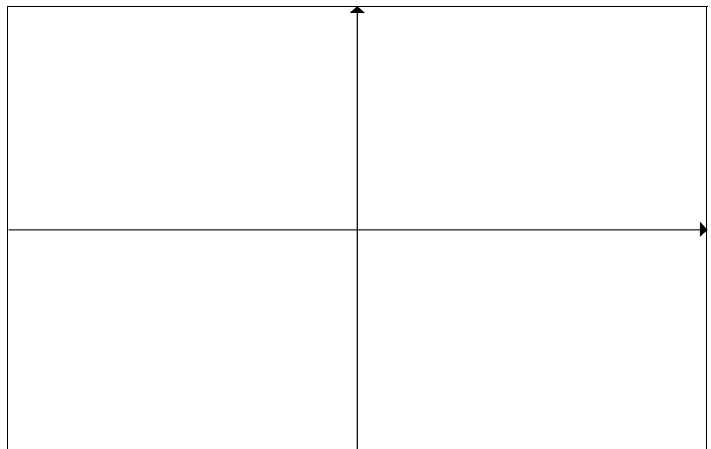
AP Calculus Summer Homework Part 1

Sketch the graph and fill in the table of facts relating to each function (graph). You may use a calculator to refresh your memory. However, it is our long term goal to know these graphs from memory. We need to be able to draw them and to recognize drawings of them when they are presented.

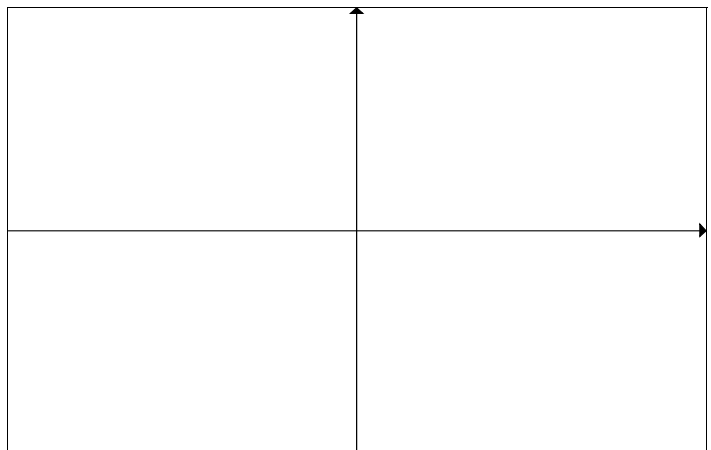
These 27 graphs will be collected and graded. The assignment will be worth 25 points.

Part 2 of the Summer Homework assignment will not be collected. Instead, we will take a **test** over that assignment on the during the first week of the school year. To create the test, I will use a random number generator to select 25 of the questions from the assignment. The test will be worth 50 points. As it is a test and not a quiz, it cannot be dropped at the end of the semester.

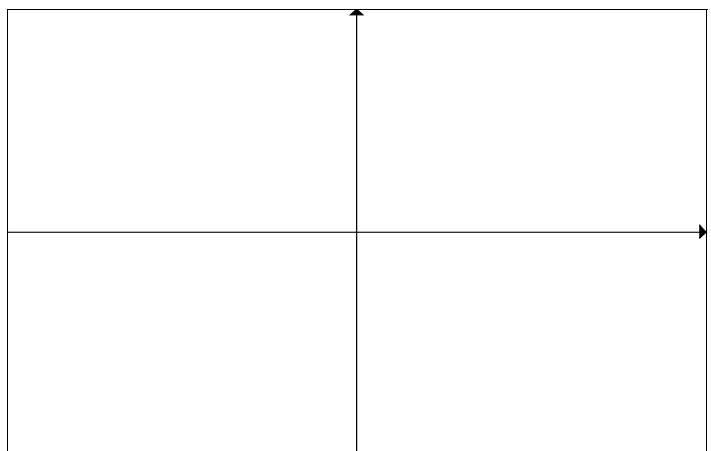
| 1. $f(x) = x$ | |
|---------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| | |



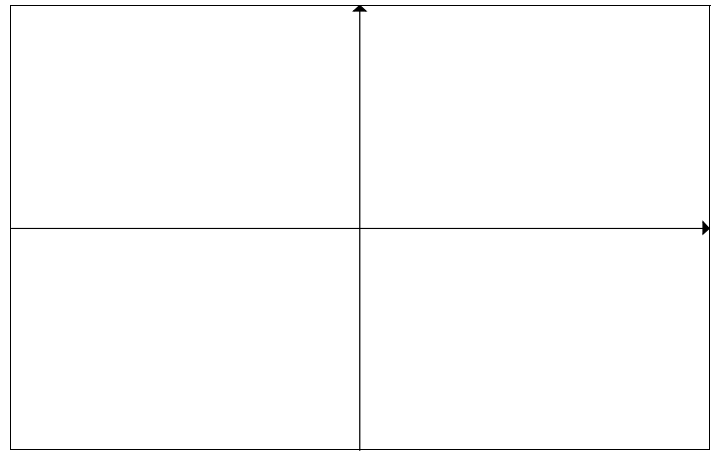
| 2. $f(x) = c$ | |
|---------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| | |



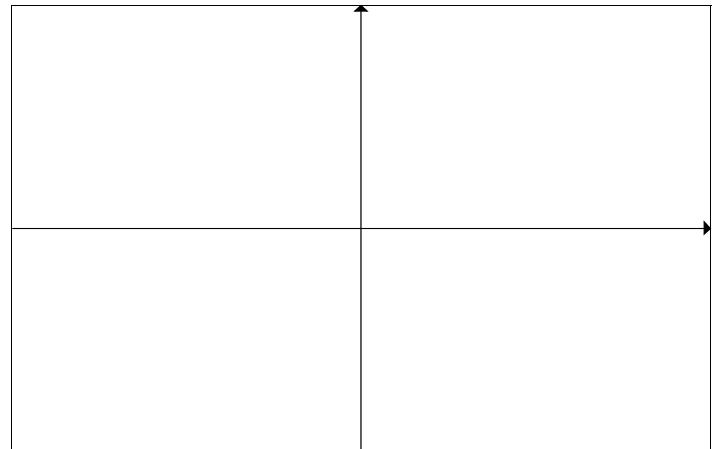
| 3. $f(x) = mx + b$ | |
|--------------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| | |



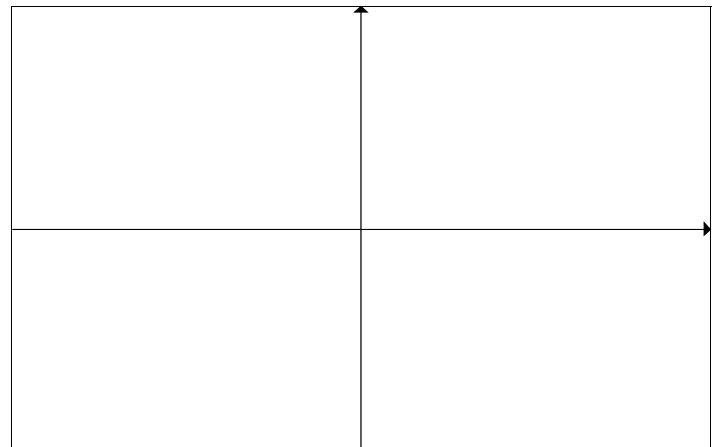
| 4. $x = c$ Not A Function | |
|---------------------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| | |
| | |



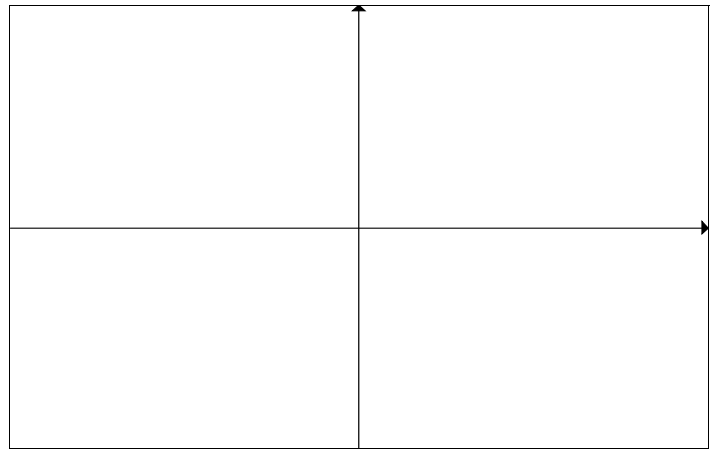
| 5. $f(x) = x $ | |
|-----------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Minimum | |
| Symmetry | |
| End Behavior | |



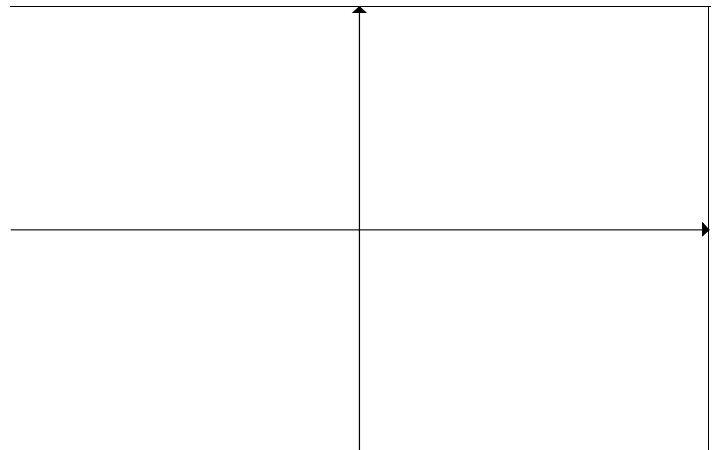
| 6. $f(x) = x^n$ n is even | |
|-----------------------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Minimum | |
| Symmetry | |
| End Behavior | |



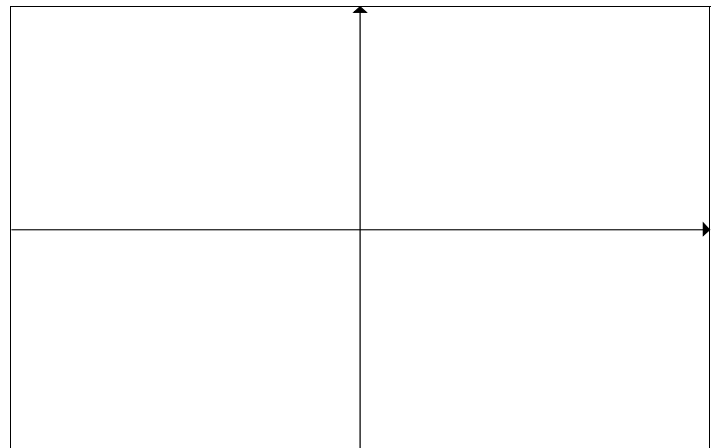
| | |
|--|--|
| $7. f(x) = x^n \quad n \text{ is odd}$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| | |



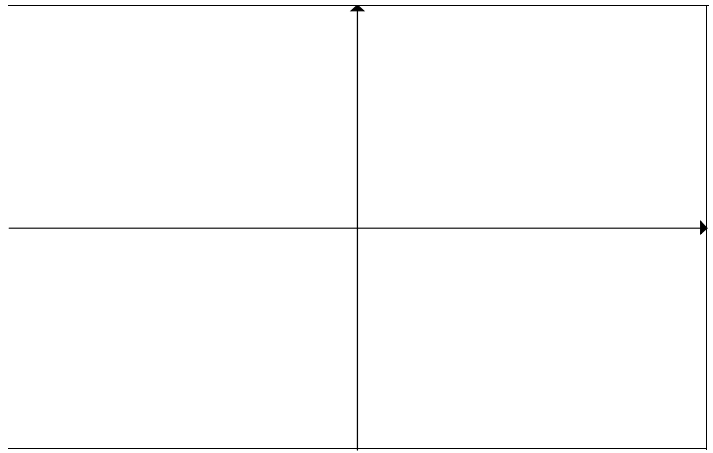
| | |
|---|--|
| $8. f(x) = \frac{1}{x^n} \quad n \text{ is even}$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Horizontal Asymptote(s) | |
| Vertical Asymptote(s) | |



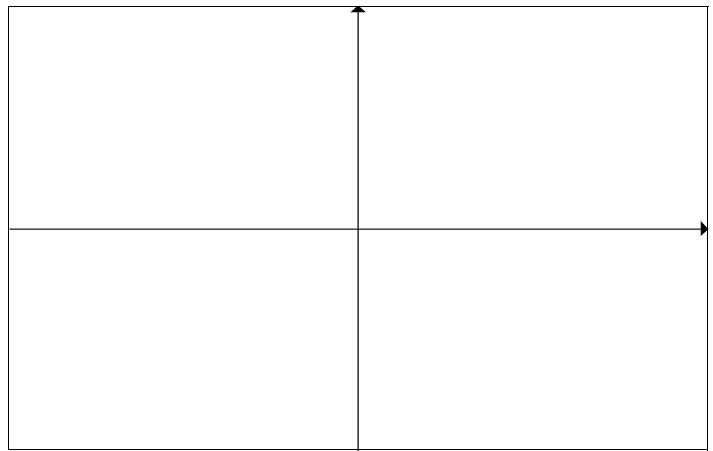
| | |
|---|--|
| $9. f(x) = \frac{1}{x^n} \quad n \text{ is odd.}$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Horizontal Asymptote(s) | |
| Vertical Asymptote(s) | |



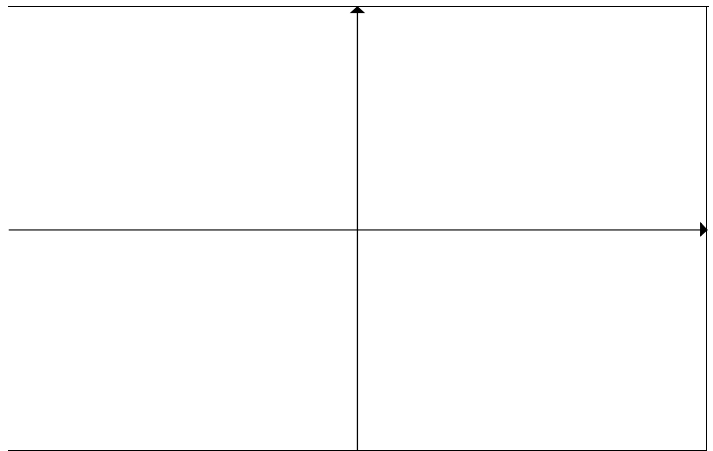
| | |
|--------------------------------------|--|
| 10. $f(x) = \sqrt[n]{x}$ n is even | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |



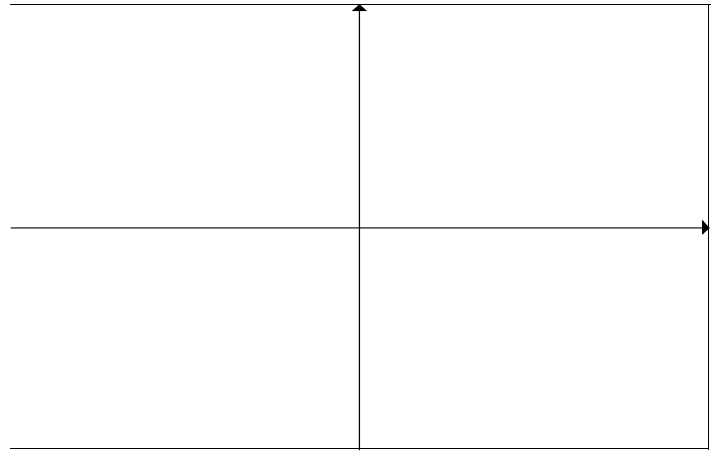
| | |
|-------------------------------------|--|
| 11. $f(x) = \sqrt[n]{x}$ n is odd | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |



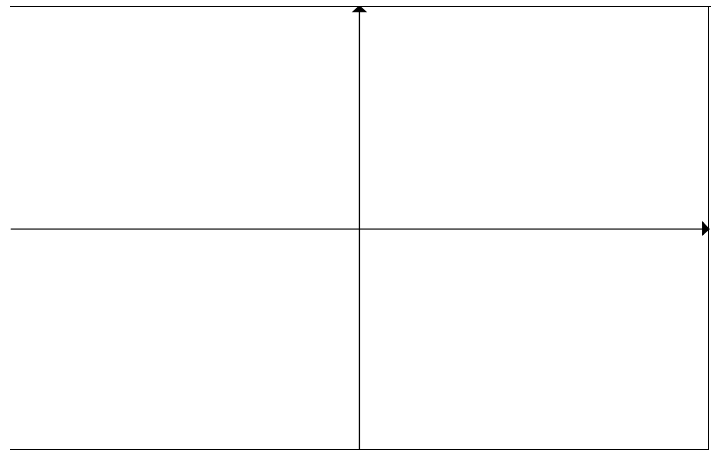
| | |
|--------------------------|--|
| 12. $f(x) = a^x$ $a > 1$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Horizontal Asymptote | |
| $f(1) =$ | |



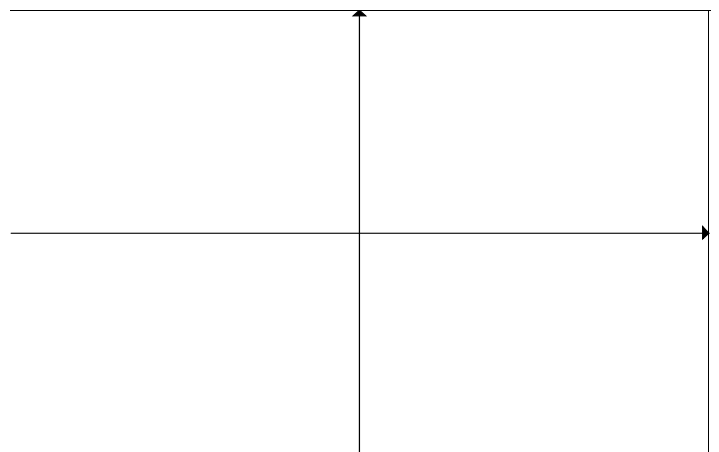
| | |
|----------------------------------|--|
| 13. $f(x) = a^x \quad 0 < a < 1$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Horizontal Asymptote | |
| $f(1) =$ | |



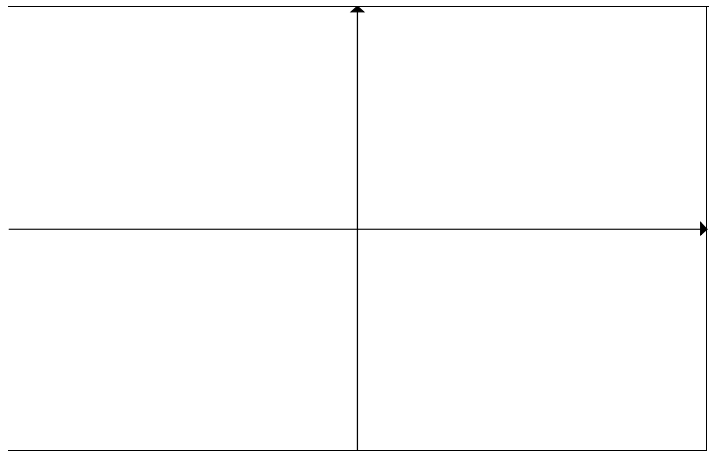
| | |
|----------------------|--|
| 14. $f(x) = e^x$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Horizontal Asymptote | |
| $f(1) =$ | |



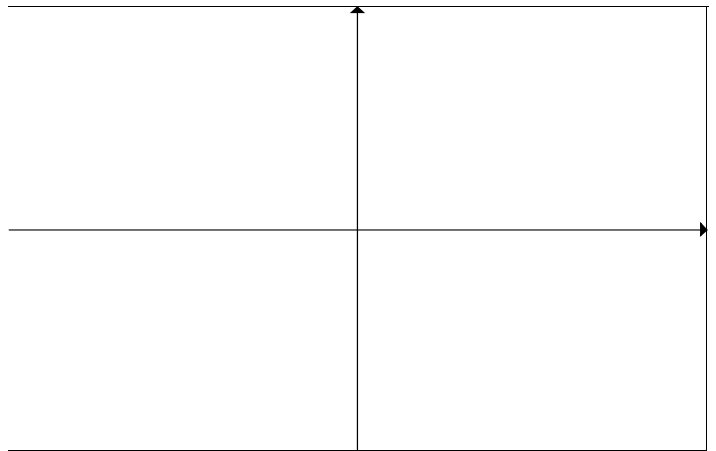
| | |
|------------------------------------|--|
| 15. $f(x) = \log_B(x) \quad B > 1$ | |
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Vertical Asymptote(s) | |
| $f(1) =$ | |
| $f(B) =$ | |



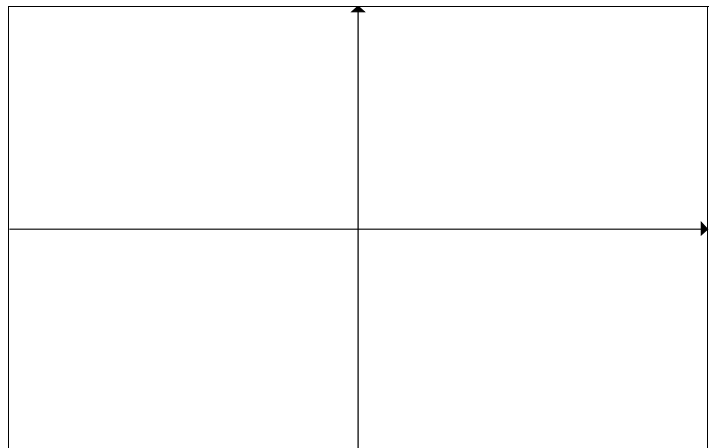
| 16. $f(x) = \ln(x)$ | |
|-----------------------|--|
| Domain | |
| Range | |
| Y-Intercept | |
| Root(s) | |
| Symmetry | |
| End Behavior | |
| Vertical Asymptote(s) | |
| $f(1) =$ | |
| $f(e) =$ | |



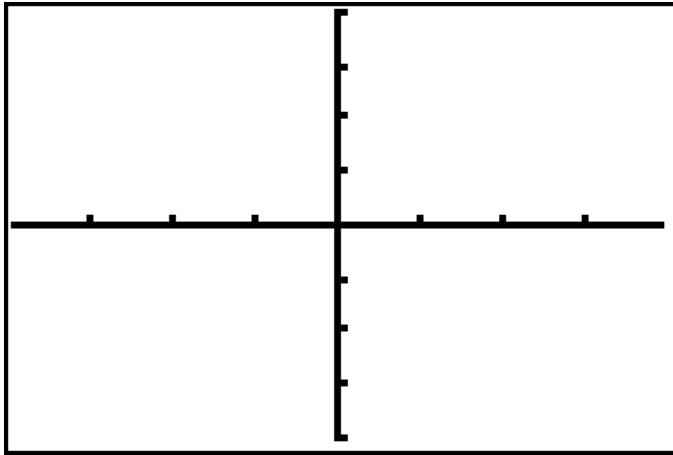
| 17. $(x-h)^2 + (y-k)^2 = r^2$ Not a Function | |
|--|--|
| Domain | |
| Range | |
| Y-Intercept(s) | |
| Root(s) | |
| Symmetry | |
| Center | |
| | |



| 18. $f(x) = \sqrt{a^2 - x^2}$ | |
|-------------------------------|--|
| Domain | |
| Range | |
| Y-Intercept(s) | |
| Root(s) | |
| Symmetry | |
| $f(a) =$ | |
| $f(-a) =$ | |



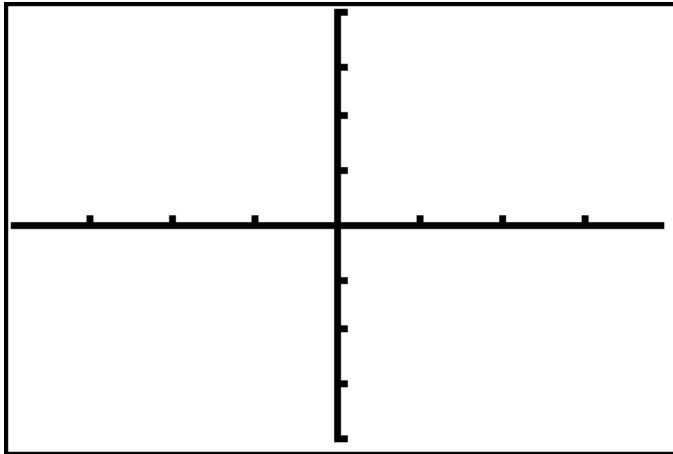
4

 2π

-4

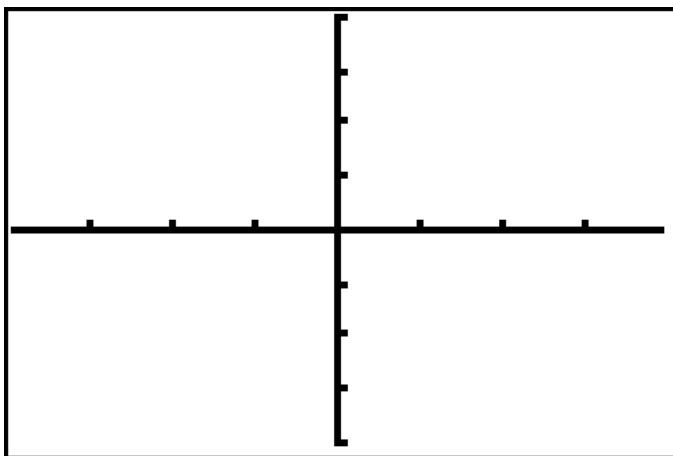
$$f(x) = \sin(x)$$

| | |
|---------------------|--|
| Domain | |
| Range | |
| Amplitude | |
| Period | |
| Vertical Asymptotes | |
| Symmetry | |
| Roots | |



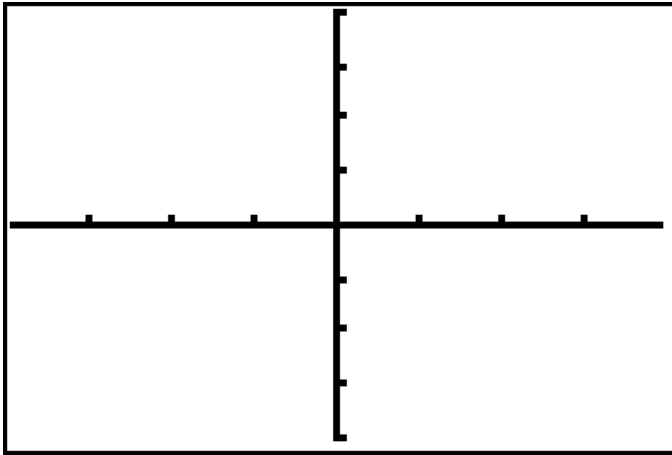
$$f(x) = \csc(x)$$

| | |
|---------------------|--|
| Domain | |
| Range | |
| Amplitude | |
| Period | |
| Vertical Asymptotes | |
| Symmetry | |
| Roots | |

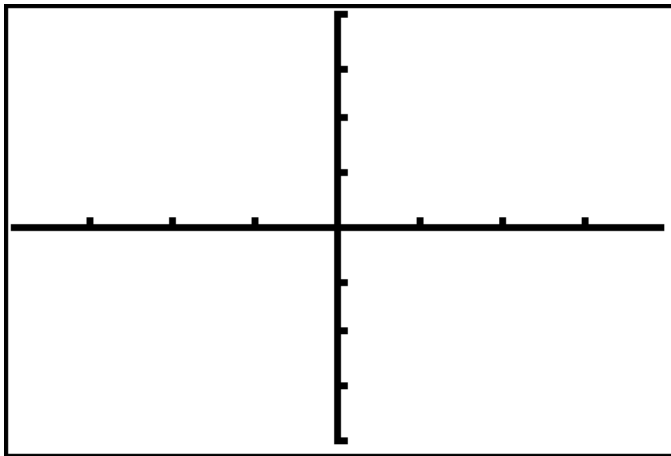


$$f(x) = \cot(x)$$

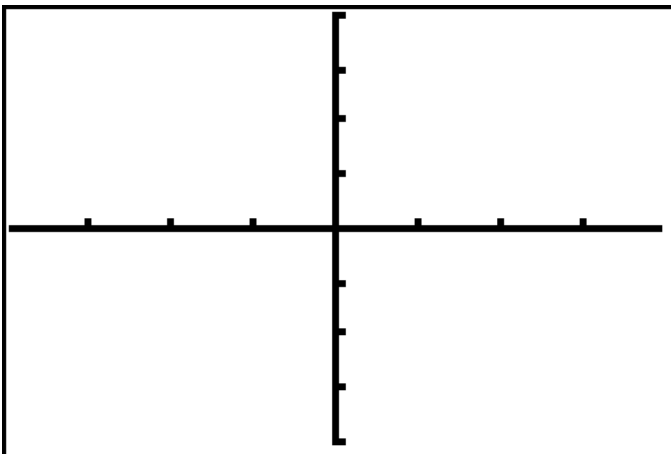
| | |
|---------------------|--|
| Domain | |
| Range | |
| Amplitude | |
| Period | |
| Vertical Asymptotes | |
| Symmetry | |
| Roots | |



| $f(x) = \cos(x)$ | |
|---------------------|--|
| Domain | |
| Range | |
| Amplitude | |
| Period | |
| Vertical Asymptotes | |
| Symmetry | |
| Roots | |

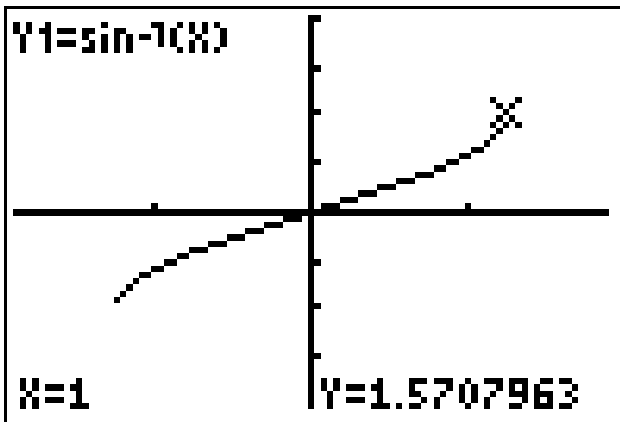


| $f(x) = \sec(x)$ | |
|---------------------|--|
| Domain | |
| Range | |
| Amplitude | |
| Period | |
| Vertical Asymptotes | |
| Symmetry | |
| Roots | |

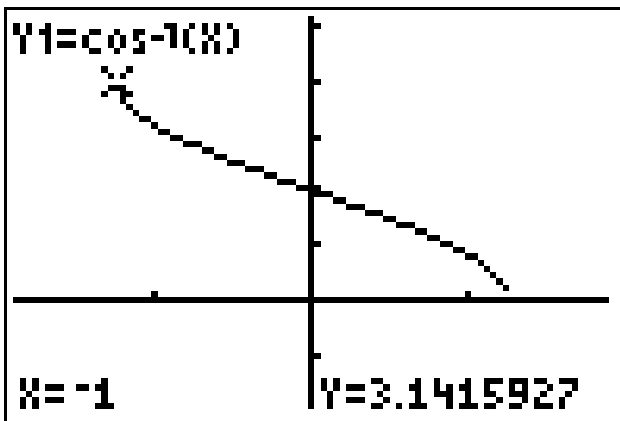


| $f(x) = \tan(x)$ | |
|---------------------|--|
| Domain | |
| Range | |
| Amplitude | |
| Period | |
| Vertical Asymptotes | |
| Symmetry | |
| Roots | |

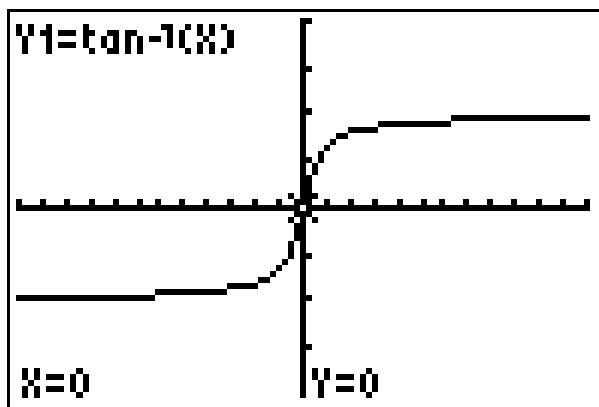
List the domain and range of each invers trigonometric function. Then list the three key points on each graph.



| $f(x) = \sin^{-1}(x)$ | |
|-----------------------|--|
| Domain | |
| Range | |
| Point 1 | |
| Point 2 | |
| Point 3 | |



| $f(x) = \cos^{-1}(x)$ | |
|-----------------------|--|
| Domain | |
| Range | |
| Point 1 | |
| Point 2 | |
| Point 3 | |



| $f(x) = \tan^{-1}(x)$ | |
|-----------------------|--|
| Domain | |
| Range | |
| Point 1 | |
| Point 2 | |
| Point 3 | |
| | |