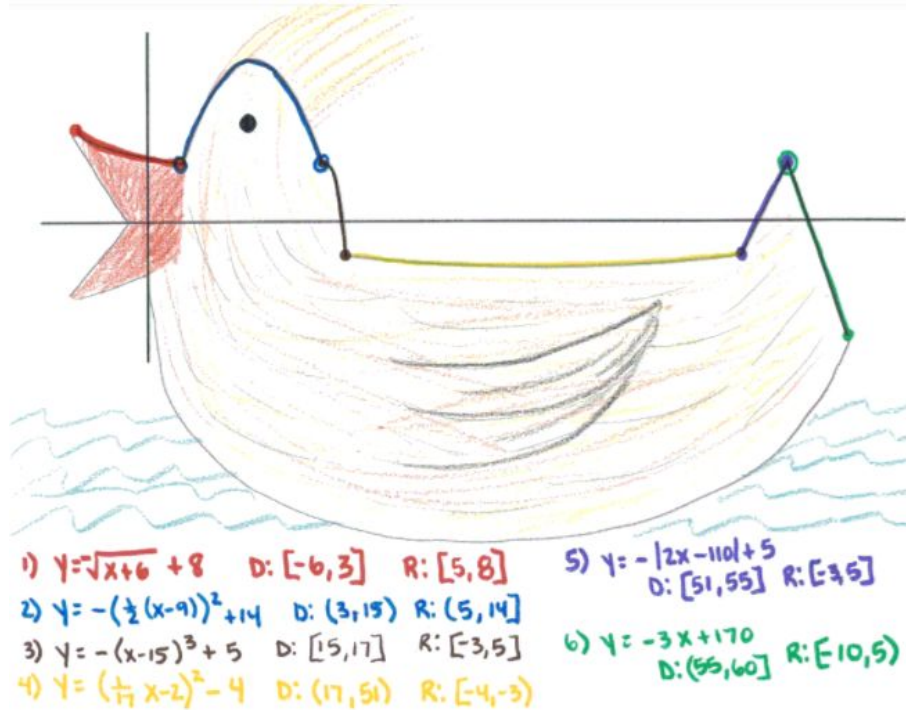# Piecewise Picture

It's time to get creative! You are tasked with designing a picture based off of piecewise defined functions. The picture must include 5 of the 7 different functions that we have discussed this year (linear, quadratic, cubic, absolute value, square root, exponential and logarithmic). You only need to use the functions to define part of the picture, and then free-hand the rest. An example has been done for you below.

1) $y=\sqrt{x+6} +8$ D: $[-6,3]$ R: $[5,8]$ 5) $y=-|2x-110|+5$ D: $[51,55]$ R: $[-3,5]$

2) $y=-(\frac{1}{2}(x-9))^2+14$ D: $(3,15)$ R: $(5,14]$

3) $y=-(x-15)^3+5$ D: $[15,17]$ R: $[-3,5]$ 6) $y=-3x+170$ D: $(55,60]$ R: $[-10,5)$

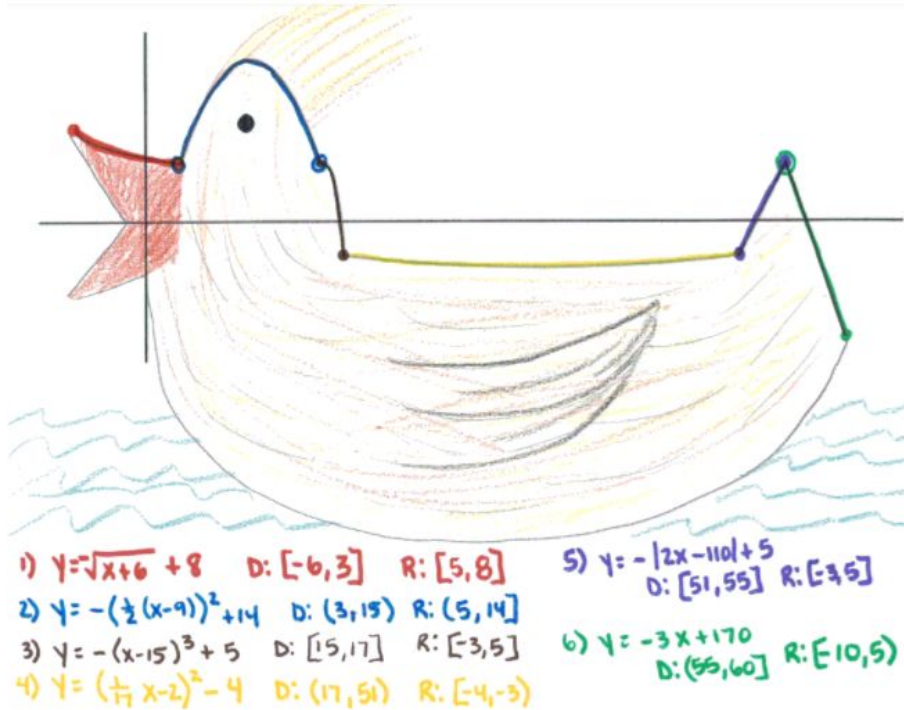4) $y=(\frac{1}{17}x-2)^2-4$ D: $(17,51)$ R: $[-4,-3)$

Requirements:(Out of 30 Points)

- Must include at least 5 of the 7 functions we've discussed with proper transformations [5 points]
- Must include at least one point that is defined on its own. (i.e. eye of the duck for example) [2 points]
- Must include 2 other discontinuities [4 points]
- Must define the piecewise function using proper notation [15 points]
- Must include a finished product of the colored picture [4 points]

Piecewise Picture

It's time to get creative! You are tasked with designing a picture based off of piecewise defined functions. The picture must include 5 of the 7 different functions that we have discussed this year (linear, quadratic, cubic, absolute value, square root, exponential and logarithmic). You only need to use the functions to define part of the picture, and then free-hand the rest. An example has been done for you below.

1) $y = \sqrt{x+6} + 8$ D: $[-6, 3]$ R: $[5, 8]$ 5) $y = -|2x - 110| + 5$ D: $[51, 55]$ R: $[3, 5]$

2) $y = -\left(\frac{1}{2}(x-9)\right)^2 + 14$ D: $(3, 15)$ R: $(5, 14]$

3) $y = -(x-15)^3 + 5$ D: $[15, 17]$ R: $[3, 5]$ 6) $y = -3x + 170$ D: $(55, 60]$ R: $[-10, 5)$

4) $y = \left(\frac{1}{11}x - 2\right)^2 - 4$ D: $(17, 51)$ R: $[-4, -3)$
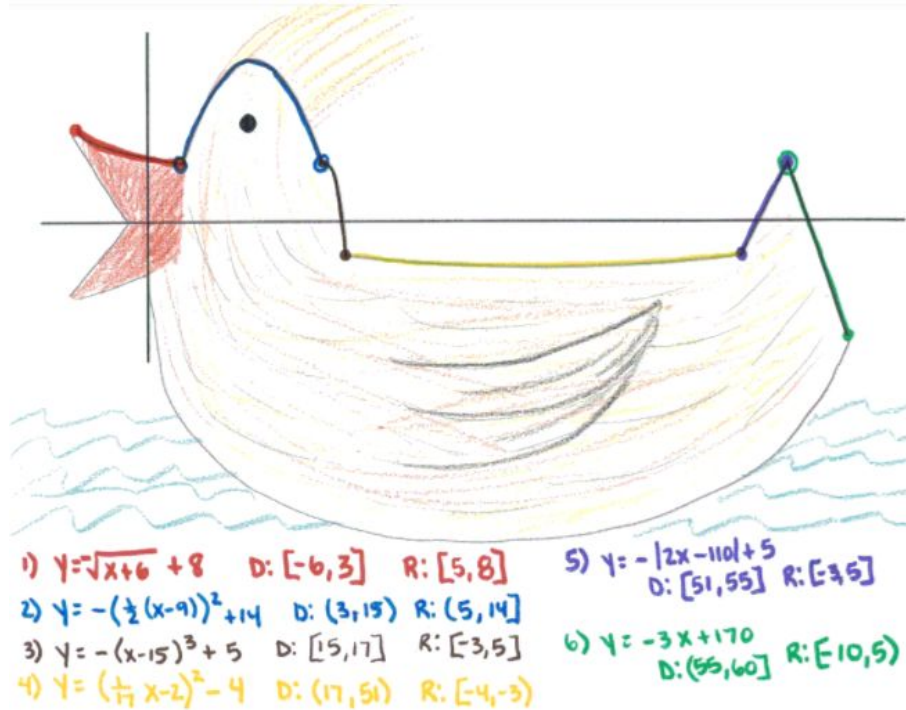
Requirements: (Out of 30 Points)

- Must include at least 5 of the 7 functions we've discussed with proper transformations [5 points]
- Must include at least one point that is defined on its own. (i.e. eye of the duck for example) [2 points]
- Must include 2 other discontinuities [4 points]
- Must define the piecewise function using proper notation [15 points]
- Must include a finished product of the colored picture [4 points]

Piecewise Picture

It's time to get creative! You are tasked with designing a picture based off of piecewise defined functions. The picture must include 5 of the 7 different functions that we have discussed this year (linear, quadratic, cubic, absolute value, square root, exponential and logarithmic). You only need to use the functions to define part of the picture, and then free-hand the rest. An example has been done for you below.

1) $y = \sqrt{x+6} + 8$ D: $[-6,3]$ R: $[5,8]$

2) $y = -(\frac{1}{2}(x-9))^2 + 14$ D: $(3,15)$ R: $(5,14]$

3) $y = -(x-15)^3 + 5$ D: $[15,17]$ R: $[-3,5]$

4) $y = (\frac{1}{17}x-2)^2 - 4$ D: $(17,51)$ R: $[-4,-3)$

5) $y = -|2x-110| + 5$ D: $[51,55]$ R: $[-3,5]$

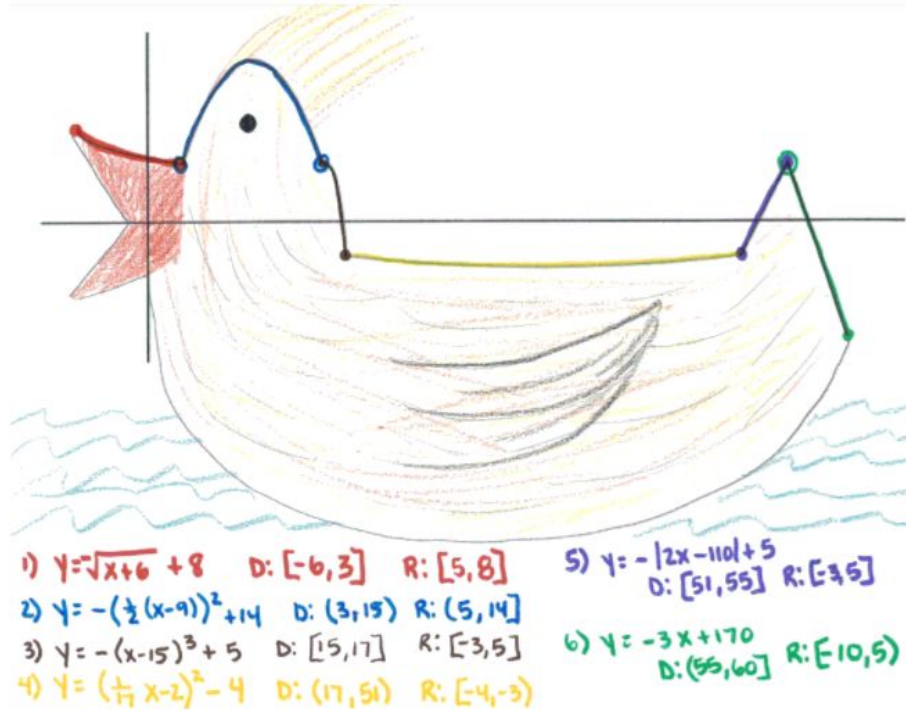6) $y = -3x + 170$ D: $(55,60]$ R: $[-10,5)$

Requirements: (Out of 30 Points)

- Must include at least 5 of the 7 functions we've discussed with proper transformations [5 points]
- Must include at least one point that is defined on its own. (i.e. eye of the duck for example) [2 points]
- Must include 2 other discontinuities [4 points]
- Must define the piecewise function using proper notation [15 points]
- Must include a finished product of the colored picture [4 points]

Piecewise Picture

It's time to get creative! You are tasked with designing a picture based off of piecewise defined functions. The picture must include 5 of the 7 different functions that we have discussed this year (linear, quadratic, cubic, absolute value, square root, exponential and logarithmic). You only need to use the functions to define part of the picture, and then free-hand the rest. An example has been done for you below.

1) $y=\sqrt{x+6} +8$ D: $[-6,3]$ R: $[5,8]$ 5) $y=-|2x-110|+5$
   D: $[51,55]$ R: $[-3,5]$

2) $y=-(\frac{1}{2}(x-9))^2 +14$ D: $(3,15)$ R: $(5,14]$

3) $y=-(x-15)^3+5$ D: $[15,17]$ R: $[-3,5]$ 6) $y=-3x+170$
   D: $(55,60]$ R: $[-10,5)$

4) $y=(\frac{1}{17}x-2)^2-4$ D: $(17,51)$ R: $[-4,-3)$

Requirements: (Out of 30 Points)

- Must include at least 5 of the 7 functions we've discussed with proper transformations [5 points]
- Must include at least one point that is defined on its own. (i.e. eye of the duck for example) [2 points]
- Must include 2 other discontinuities [4 points]
- Must define the piecewise function using proper notation [15 points]
- Must include a finished product of the colored picture [4 points]