1. (12 points) Consider the function \( y = f(x) \) shown at right. Use transformations to match the following functions to the graphs shown below. No explanation is necessary.

(a) \( y = f(x - 1) \)  
(b) \( y = f(x/2) \)  
(c) \( y = |f(x)| \)  
(d) \( y = |f(x) + 1| \)

2. (10 points) Let \( \tan \theta = \frac{1}{2}, \pi < \theta < \frac{3\pi}{2} \). Find the other five trigonometric ratios.

3. (10 points) Find all values of \( x \) in the interval \( [-\pi, \pi] \) that satisfy the inequality \( 2 \cos x + 1 < 0 \).

4. (10 points) A line with slope \(-4/3\) intersects the curve \( y = x^{2/3} - 2\sqrt[3]{x} \) at \( x = 1/8 \). Find the equation of the line in slope-intercept form. Be sure to simplify your answer.
5. (20 points)

(a) Find a formula for the function $f$ graphed below.

(b) Find the following values.

(i) $f(2)$

(ii) $\lim_{x \to 1^-} f(x)$

(iii) $\lim_{x \to 2} f(x)$

(iv) $\lim_{x \to 0} f(x)$

6. (10 points) Find the intersection points of the following curves. Provide both $x$ and $y$ coordinates.

\[ y = \frac{12}{x} \text{ and } y = \frac{3}{\frac{3}{x} - 1}. \]

7. (8 points) Find a polynomial $P(x)$ such that $P(2) = P(1) = P(-1) = 0$ and $P(0) = -48$. Leave your answer unsimplified.

8. (12 points) Let $h(x) = \frac{8x^3}{x + x^5}$.

(a) Find the domain of $h$. Express your answer in interval notation.

(b) Is $h$ even, odd or neither? Justify your answer.

(c) Find functions $f$ and $g$ such that $h = f \circ g$ and $f(x) \neq x$ and $g(x) \neq x$.

9. (8 points) Ralphie leaves Denver at 3:20 am and drives north at a constant speed along I-25, reaching Cheyenne, 99 miles away, at 4:50 am. Find a function $d(t)$ that represents the distance in miles traveled in terms of the number of hours elapsed.