Quiz 1

Name:

01/23/2020

This quiz has 5 questions worth 25 points on 3 pages. Try to do as many questions as possible. You can use your calculator.

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1. (a) (1 point) Find the slope and y-intercept of the function $2y + 5x - 8 = 0$

   (b) (1 point) Find the initial value and half life of the function $P(t) = 2 \cdot (\frac{1}{3})^t$.

   (c) (1 point) Find the amplitude and period of the sinusoidal function $y = -\frac{2}{\pi} \sin\left(\frac{2}{\pi}x + 3\right) - 1$

2. (4 points) Mark following functions with 'Odd', 'Even' or 'Neither'
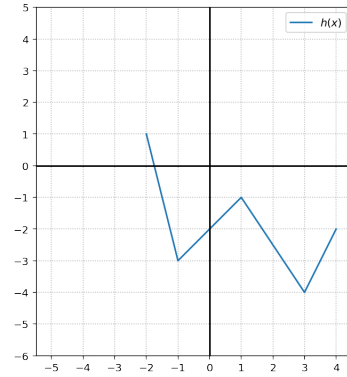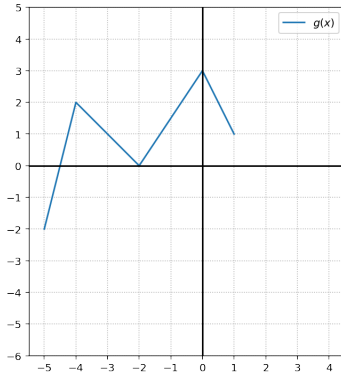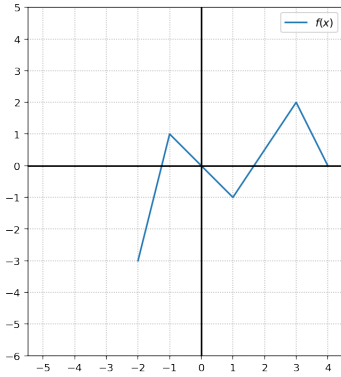
   - $(x+2)^2 - (x^2 + 2^2)$
   - $\ln(\frac{x+1}{x-1})$

   - e^{x^2}
   - $\cos(x^3 + 1)$

3. (2 points) Solve the equation $e^{\log(x)} = 10^{\ln(10)}$

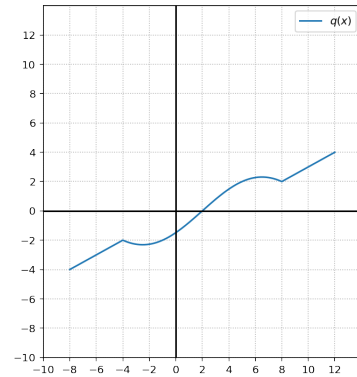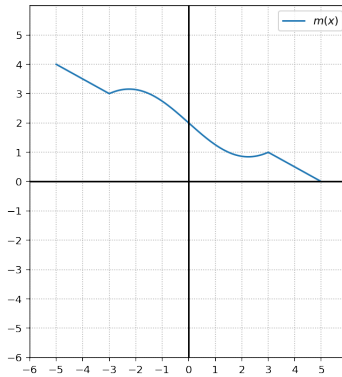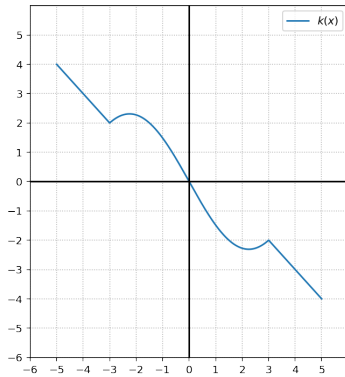4. The graph of a function $f(x)$ is shown below. The domain of $f(x)$ is $-2 \leqslant x \leqslant 4$.

(a) (6 points) Each of the function $g(x)$ and $h(x)$ shown below is a transformation of the function $f(x)$. Write a formula for each function in terms of $f(x)$.

- $g(x) =$ _____
- $h(x) =$ _____

(b) (4 points) Determine the domain and range of the function $j(x) = -2f(x-6) + 3$

Domain: _____ $\leqslant x \leqslant$ _____ , Range: _____ $\leqslant y \leqslant$ _____

5. A part of the graph of a function $k(x)$ with domain $-5 \leqslant x \leqslant 5$ is given below. Both $m(x)$ and $q(x)$ are obtained from $k(x)$ by one or more transformations. In each case, circle *all* possible formulas for the function shown. Graphs are **NOT** drawn on the same scale.

(a) (3 points) $m(x) =$

(A) $\frac{1}{2}k(x) - 2$

(B) $\frac{1}{2}k(x) + 2$

(C) $-\frac{1}{2}k(-x) - 2$

(D) $-\frac{1}{2}k(-x) + 2$

(E) $-\frac{1}{2}k(x) - 2$

(F) $2k(x) - 2$

(G) $2k(x) + 2$

(H) $-2k(x) - 2$

(I) $-2k(-x) - 2$

(J) $-2k(x) + 2$

(K) NONE OF THESE

(b) (3 points) $q(x) =$

(A) $k(2x + 2)$

(B) $k(-2x - 2)$

(C) $-k(2x + 2)$

(D) $k(-2x + 2)$

(E) $-k(0.5(x + 2))$

(F) $-k(0.5x - 2)$

(G) $k(0.5x + 2)$

(H) $k(0.5(x - 2))$

(I) $k(2(x + 1))$

(J) $-k(0.5(x - 2))$

(K) NONE OF THESE