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Class Name : **MATH 1050/1051 Fall 2019**

Review Questions

1. Factor completely.

$$4x^5 - 22x^4 + 10x^3$$

2. Solve for x.

$$|5x - 3| = |5x - 7|$$

3. Simplify the expression.

$$\left(x^{\frac{4}{3}} \cdot y^3\right)^{-\frac{1}{3}}$$

Write your answer without using negative exponents.
Assume that all variables are positive real numbers.

4. Solve for T.

$$Pr = \frac{I}{T}$$

5. Solve the compound inequality.

$4y - 2 > -26$ or $-2y \leq -6$

Write the solution in interval notation.
If there is no solution, enter $\varnothing$.

6. Jane's Coffee Shop makes a blend that is a mixture of two types of coffee. Type A coffee costs Jane $\$4.35$ per pound, and type B coffee costs $\$5.50$ per pound. This month, Jane made 113 pounds of the blend, for a total cost of $\$562.85$. How many pounds of type A coffee did she use?

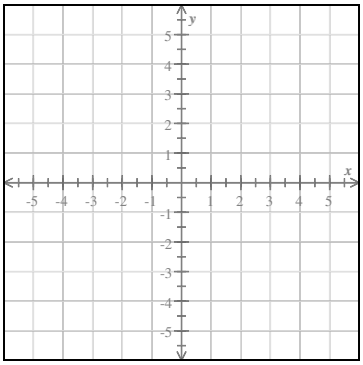
7. Factor by grouping.

$$3u^3 - u^2 + 3u - 1$$

8. Suppose that the function g is defined as follows.

$$g(x)=\begin{cases}-2 & \text{if } -2.5<x\le -1.5\\ -1 & \text{if } -1.5<x\le -0.5\\ 0 & \text{if } -0.5<x<0.5\\ 1 & \text{if } 0.5\le x<1.5\\ 2 & \text{if } 1.5\le x<2.5\end{cases}$$

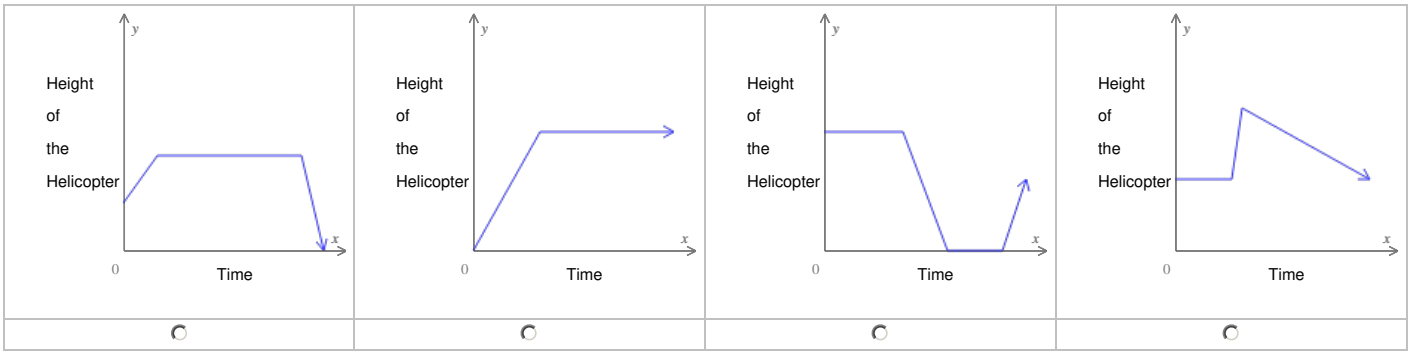
Graph the function g.



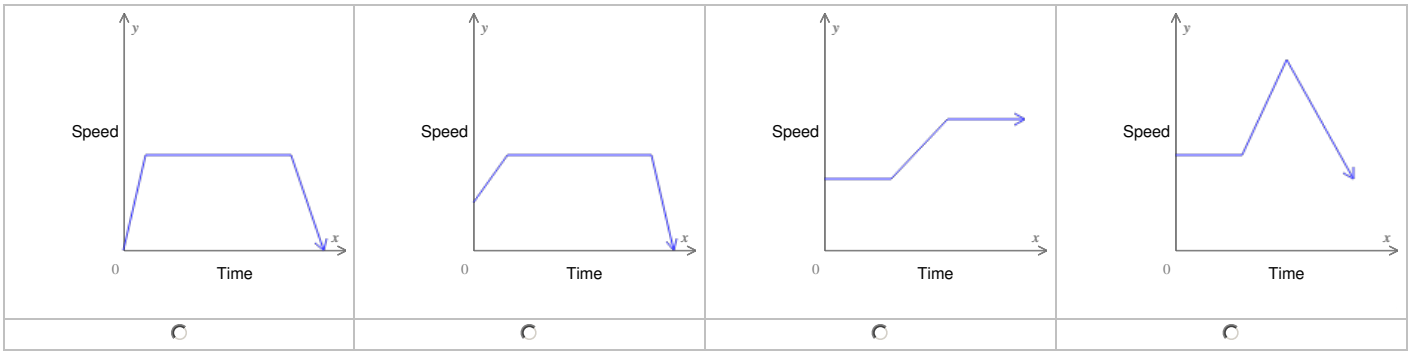
9.

For each scenario below, choose the graph that gives the best representation.

(a) A helicopter takes off from the roof of a hospital and rises. After reaching its peak, it flies several miles at constant height to a park, where it lands to pick up a patient.



(b) Alonzo is driving on the freeway at a constant speed. He then speeds up to pass a truck. After passing the truck, he exits the freeway and slows down.



10. Find the x-intercept(s) and y-intercept(s) of the graph of the following.

$$y = x^2 - 36$$

If there is more than one answer, separate them with commas.