Math 1050 Section 3
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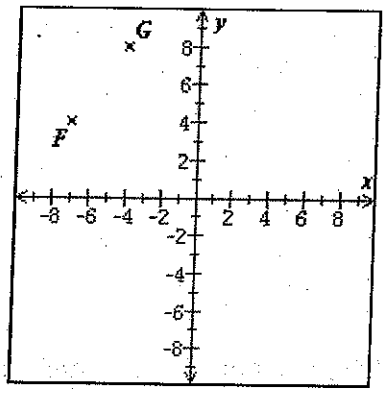
Chapter 2 Exam Form A
DO NOT WRITE ON THIS EXAM!

Directions: Put your name on each piece of scratch paper that you use. Turn in your scratch paper along with your answer sheet when you finish the exam. Do each problem in order on your scratch paper showing all the steps of your solution. Put your final answer neatly on the answer sheet. Remember to check your answers to insure a good score. Good luck, your preparation will pay off!

1. Calculate the distance between the points $F=(-7,4)$ and $G=(-4,8)$ in the Cartesian plane.

Write the exact answer in radical form.



2. The function g is defined by $g(x)=\dfrac{2x+7}{x+1}$.

Find $g(x+3)$.

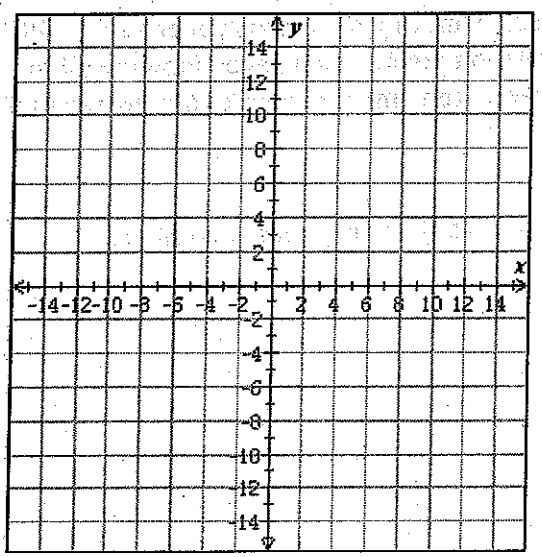
3. Write equations for the vertical and horizontal lines passing through the point $(-7,3)$.

vertical line:

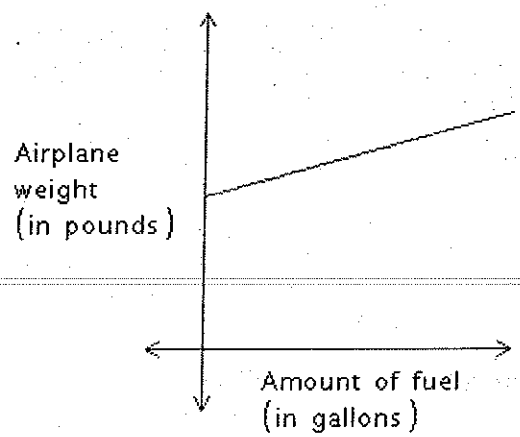
horizontal line:

4. Graph

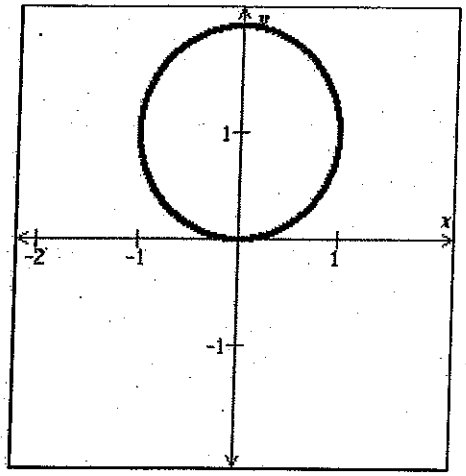
$$y=\frac{5}{4}x^3 .$$



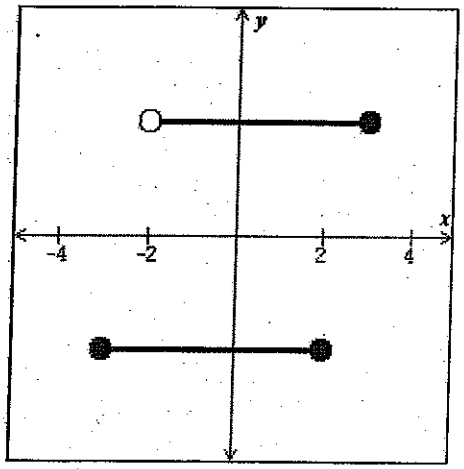
5. Suppose that the weight (in pounds) of an airplane is a linear function of the amount of fuel (in gallons) in its tank. When carrying 10 gallons of fuel, the airplane weighs 2055 pounds. When carrying 42 gallons of fuel, it weighs 2231 pounds. How much does the airplane weigh if it is carrying 52 gallons of fuel?



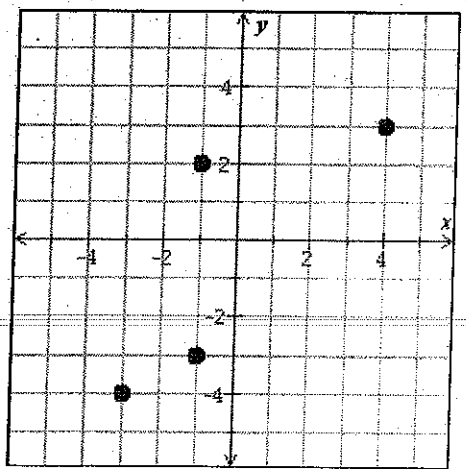
6. For each graph below, state whether it represents a function.



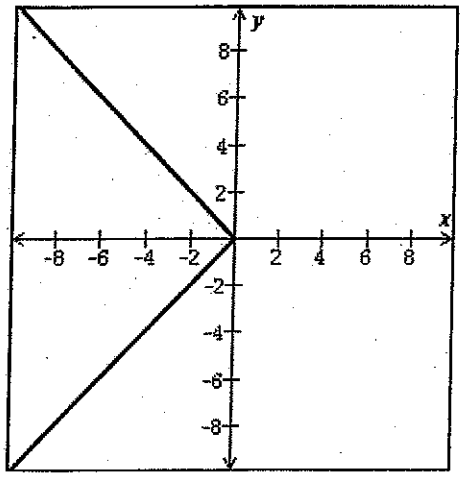
Function?:
Yes No



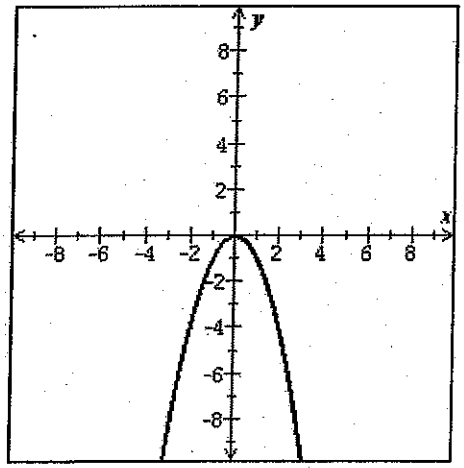
Function?:
Yes No



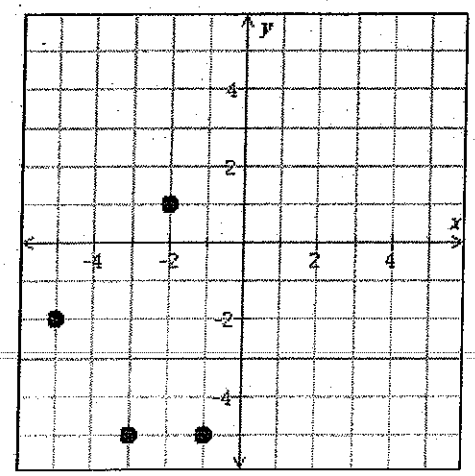
Function?:
Yes No



Function?:
Yes No



Function?:
Yes No



Function?:
Yes No

7. Suppose that the functions f and g are defined as follows.

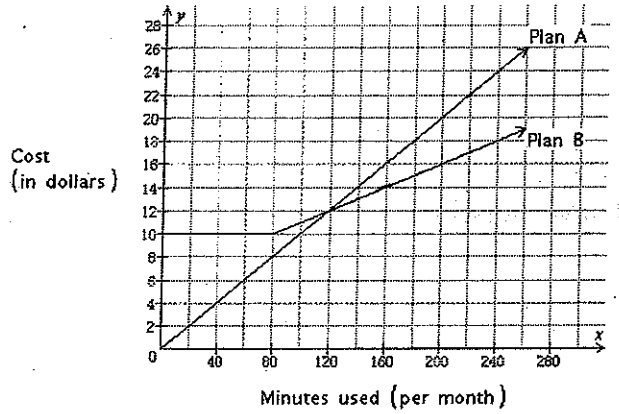
$$f(x) = 4x - 3$$

$$g(x) = \frac{1}{\sqrt{x-2}}$$

Find $f - g$ and $f \cdot g$. Then, give their domains using interval notation.

$(f-g)(x) =$	
Domain of $f-g$:	
$(f \cdot g)(x) =$	
Domain of $f \cdot g$:	

8. Sam can choose Plan A or Plan B for his long distance charges. For each plan, cost (in dollars) depends on minutes used (per month) as shown below.

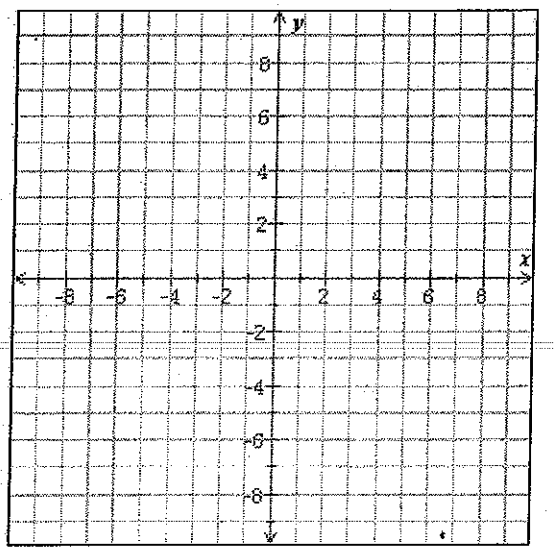


a. If Sam makes 160 minutes of long distance calls for the month, which plan costs less? How much less does it cost than the other plan?

b. For what number of long distance minutes do the two plans cost the same? If the time spent on long distance calls is less than this amount, which plan costs less?

9. Graph the line.

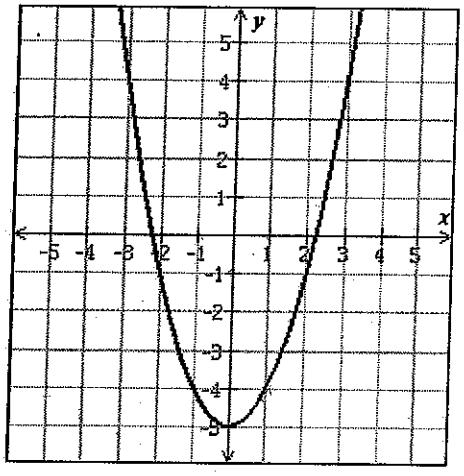
$$5x - 2y = -6$$



10. Amanda purchased a prepaid phone card for $\$15$. Long distance calls cost 6 cents a minute using this card. Amanda used her card only once to make a long distance call. If the remaining credit on her card is $\$13.92$, how many minutes did her call last?

11. The graph of a function f is shown below.

Find $f(1)$ and find a value of x for which $f(x)=-1$.



12. Suppose that the functions u and w are defined as follows:

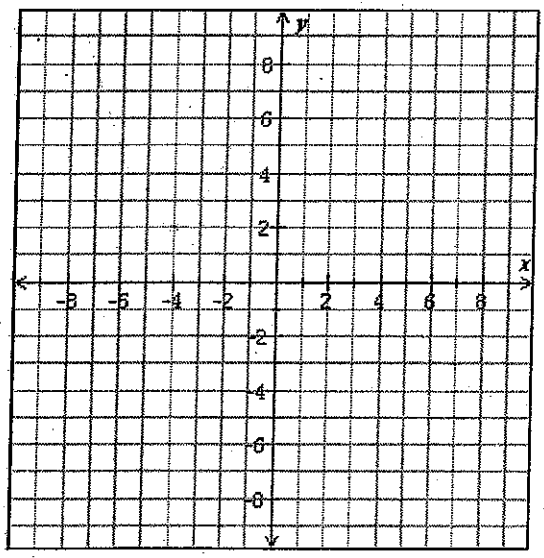
$$u(x)=x-2$$
$$w(x)=x^2-2 .$$

Find the following:

$$(u \circ w)(2)$$
$$(w \circ u)(2)$$

13. Graph the parabola:

$$y=(x+4)^2+2\,.$$



14. Find the domain of the function.

$$h(x)=\sqrt{-5x+15}$$

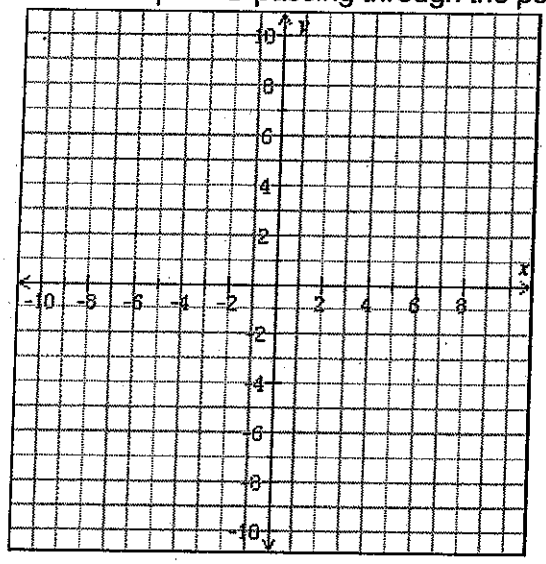
Write your answer using interval notation.

15. Suppose that the relation H is defined as follows.

$$H=\{(7,6),(-2,4),(7,-9),(0,-2)\}$$

Give the domain and range of H.
Write your answers using set notation.

16. Graph the line with slope -1 passing through the point $(3,-2)$.

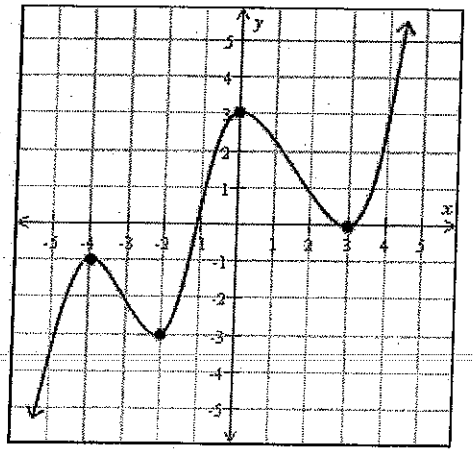


17. Use the graph of the function g below to find the following.

All values at which g has a local minimum

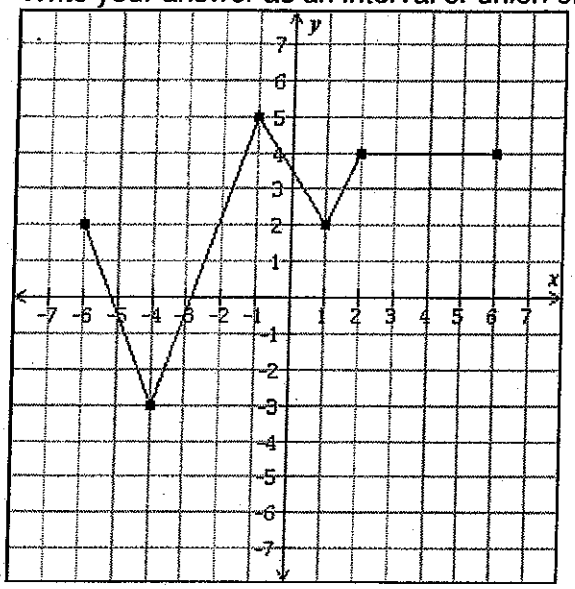
All local minimum values of g

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



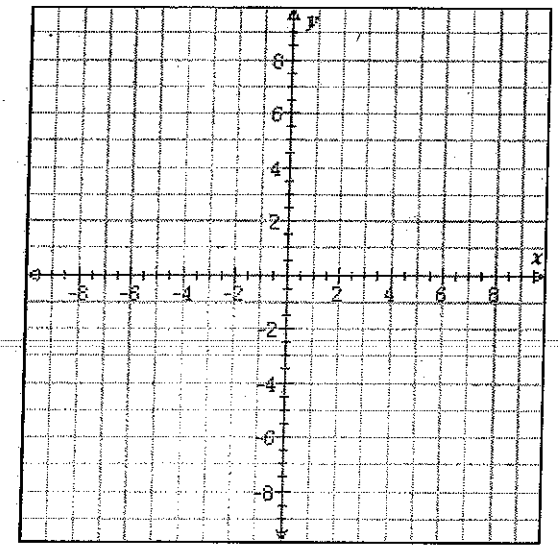
18. Determine the interval(s) on which the function is (strictly) decreasing.

Write your answer as an interval or union of intervals.

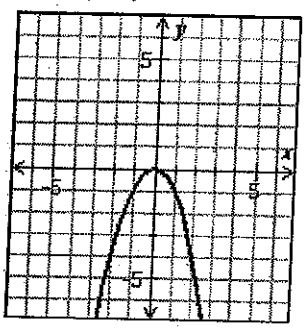


19. Graph the parabola:

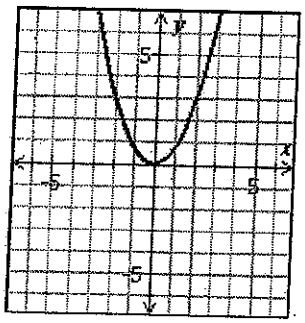
$$y=-\frac{3}{2}x^2 .$$



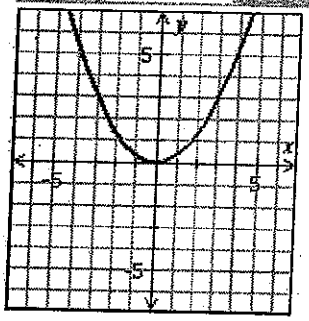
20. Look at the graphs and their equations below. Then fill in the information about the leading coefficients A, B, C, and D.



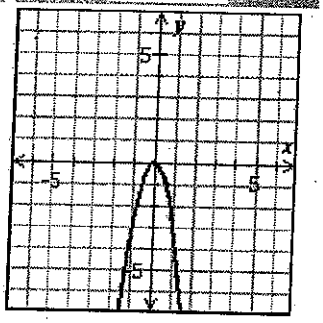
$y = Ax^2$



$y = Bx^2$



$y = Cx^2$

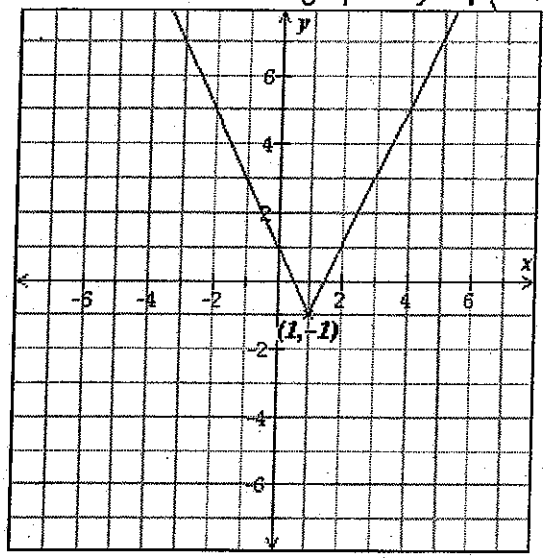


$y = Dx^2$

	A	B	C	D
(a) For each coefficient, choose whether it is positive or negative	- Positive - Negative	- Positive - Negative	- Positive - Negative	- Positive - Negative
(b) Choose the coefficient closest to 0	○	○	○	○
(c) Choose the coefficient with the greatest value	○	○	○	○

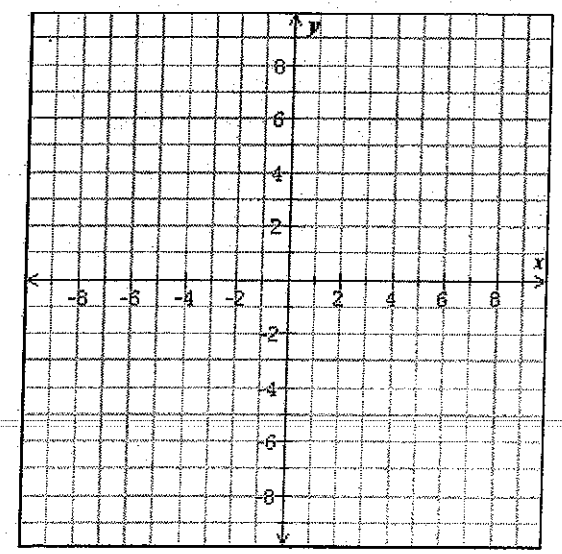
21. Below is the graph of $y=f(x)$.

Translate it to make it the graph of $y=f(x+3)$.



22. Graph the line.

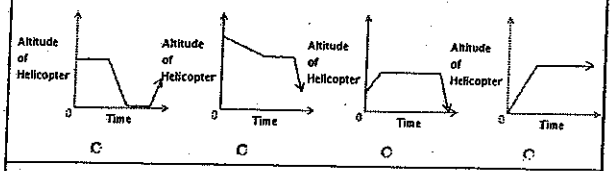
$$2x-3y=-6$$



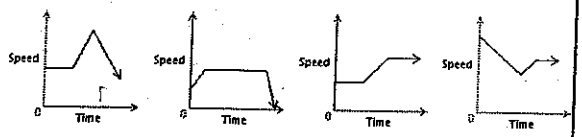
23. Find the slope of the line passing through the points $(-6,6)$ and $(4,-7)$.

24. 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 a constant altitude to a park, where it lands to pick up a patient.



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



25. Find the domain of the function.

$$f(x) = \frac{\sqrt{x+4}}{-2x+7}$$

Write your answer as an interval or union of intervals.