

Last Name:_____ First Name:_____

1.) _____

13.) _____

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18.) _____

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22.) _____

11.) _____

23.) _____

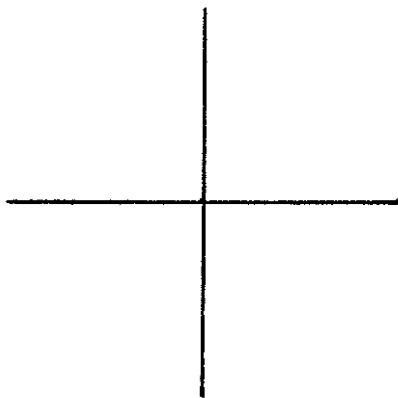
12.) _____

24.) _____

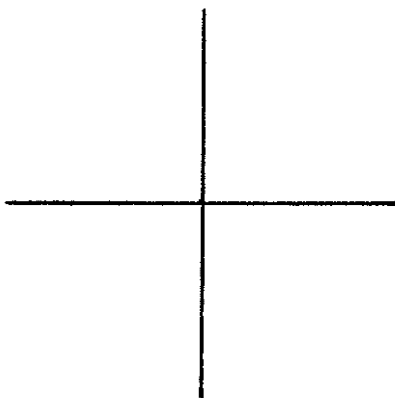
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25.)

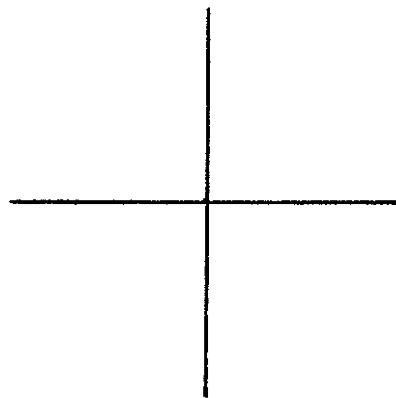
26.) id



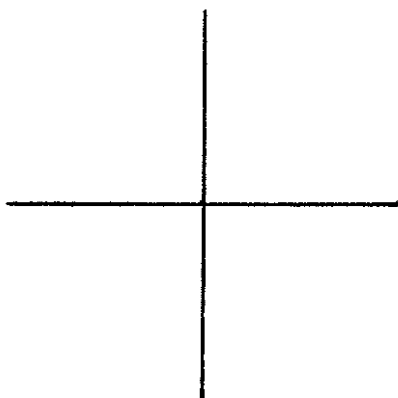
27.) $f(x) = 2$



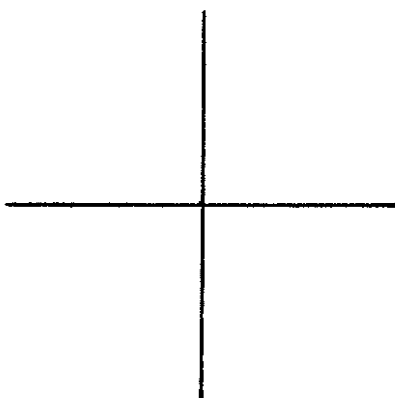
28.) x^2



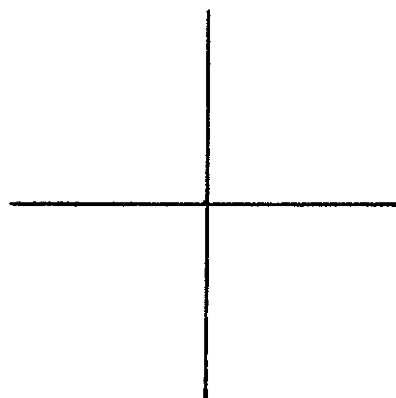
29.) x^3



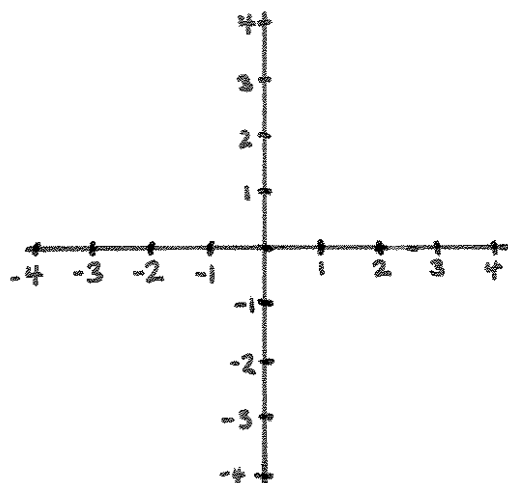
30.) $\frac{1}{x}$



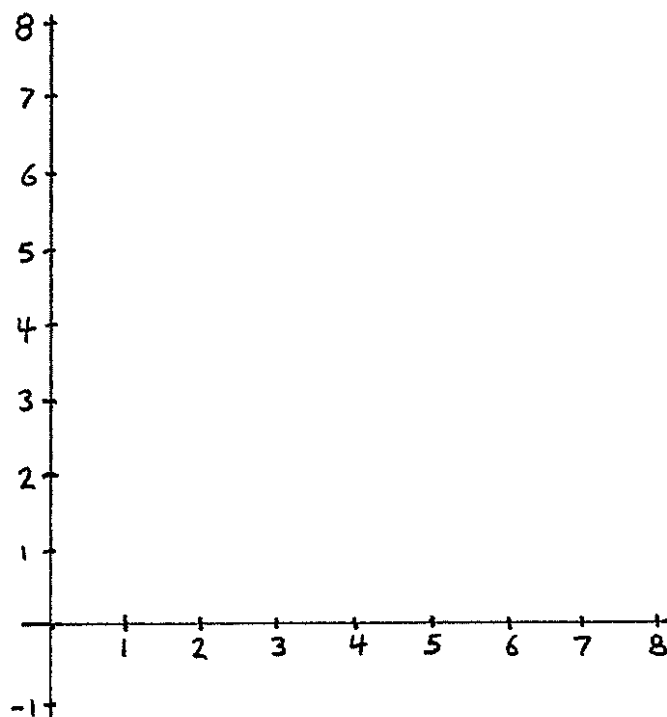
31.) $\frac{1}{x^2}$



32.) $g(x)$



33.) $h(x)$



First Practice Exam

For #1-3, decide whether the given sequence is arithmetic, geometric, or neither.

1.) 2, 20, 200, 2000, ...

2.) 6, 8, -7, 8, -7, ...

3.) -10, 10, 30, 50, ...

4.) Write $\sum_{i=1}^4 (2i-1)$ as an integer in standard form.

5.) Write $\sum_{i=1}^{55} 2$ as an integer in standard form.

6.) Write $\sum_{i=1}^{80} i$ as an integer in standard form.

7.) What is the 98th term in the sequence $2, -6, 18, -54, \dots$?

8.) What is the 21st term in the sequence $-10, -7, -4, -1, \dots$? (Your answer should be an integer in standard form.)

9.) What is the sum of the first 200 terms of the sequence $5, 15, 25, 35, \dots$? (Your answer should be an integer in standard form.)

10.) What does the following series equal: $100 + 25 + \frac{25}{4} + \frac{25}{16} + \dots$? (Your answer should be a rational number in standard form.)

11.) You're buying a car. You know which model you want to buy, but you are given the option of 3 different colors, 2 different styles of hubcaps, and 4 kinds of new car scent. How many different types of car could you buy?

12.) You are skiing at a resort. There are 32 different runs you can ski at the resort. You want to ski each run exactly once, so you need to decide which to ski first, second, third, etc. How many different decisions could you make?

13.) You're on a boat with 200 people. The boat is sinking and there is only one life raft that seats 8. How many different options are there for which 8 people to put in the raft?

14.) You are in an ice cream shop. There are 31 flavors of ice cream. You are building a sundae with a scoop of ice cream on the bottom, a different flavor on top of that, and a third different flavor on top of that. If it matters to you which flavor is on the bottom, in the middle, and on the top, then how many different sundaes can you make?

15.) What is $\binom{12}{9}$?
(Your answer should be a natural number in standard form.)

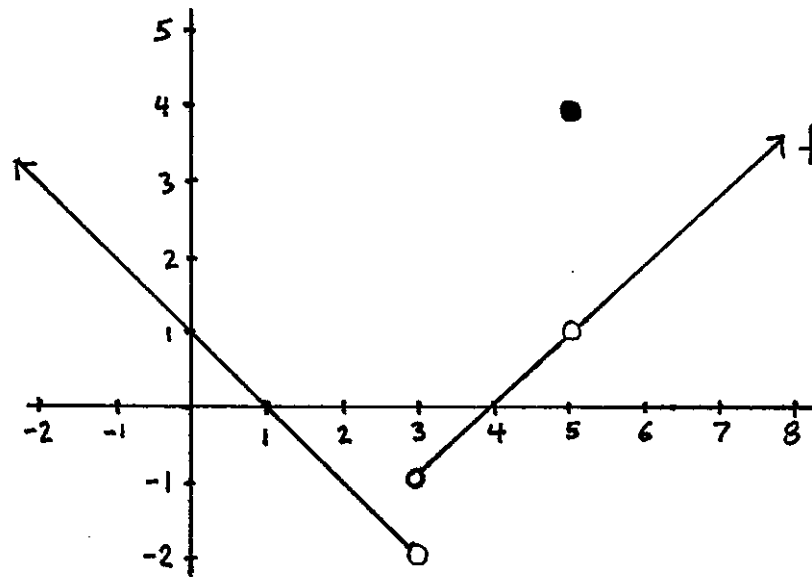
16.) If $f(x) = 4x + 1$ and $g(x) = x^2 + 3$, then what is $g \circ f(x)$?

17.) What is the implied domain of $f(x) = 3x^2 - 2x + 7$?

18.) What is the implied domain of

$$g(x) = \frac{-5x^2 - x + 3}{2x + 4} ?$$

Below is the graph of a function $f(x)$. Use this graph to answer questions #19-23.



19.) What is $f(5)$?

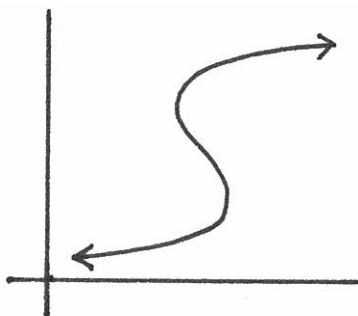
20.) What is the domain of f ?

21.) What is the range of f ?

22.) What are the x -intercepts of the graph of f ?

23.) What is the y -intercept of the graph of f ?

24.) Is the picture below the graph of a function?



25.) Write out the product $(x+y)^6$ so that your final answer doesn't include numbers that look like $\binom{n}{k}$.

26.) Graph id .

27.) Graph $f(x) = 2$.

28.) Graph x^2 .

29.) Graph x^3 .

30.) Graph $\frac{1}{x}$.

31.) Graph $\frac{1}{x^2}$.

32.) Graph $g : [-1, 2) \rightarrow \mathbb{R}$ where $g(x) = x^2$.

33.) Graph $h : \{1, 2, 3, 4\} \rightarrow \mathbb{R}$ where $h(x) = x^2 - 2x$.