

## Math 2

- tools
- glue sticks
- scissors

QUIZ  
tomorrow!

\*take out HW  
from last night.

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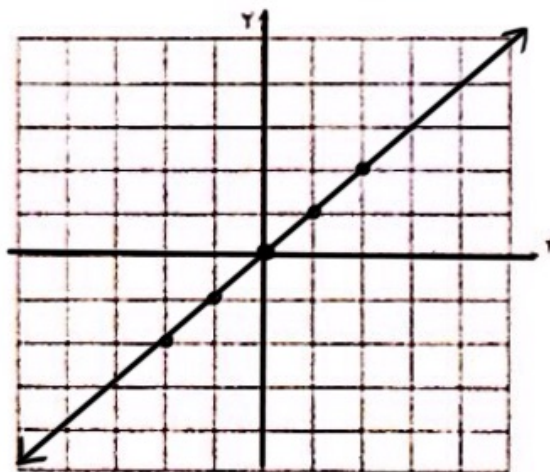


### Linear

$$f(x) = x$$

$$y = x$$

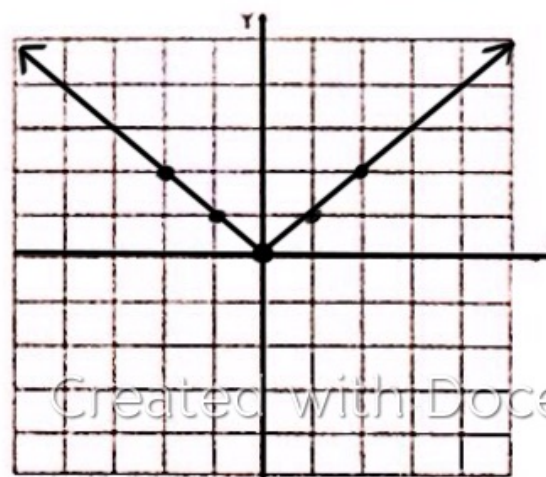
x	f(x)
-2	-2
-1	-1
0	0
1	1
2	2



### Absolute Value

$$f(x) = |x|$$

x	f(x)
-2	2
-1	1
0	0
1	1
2	2



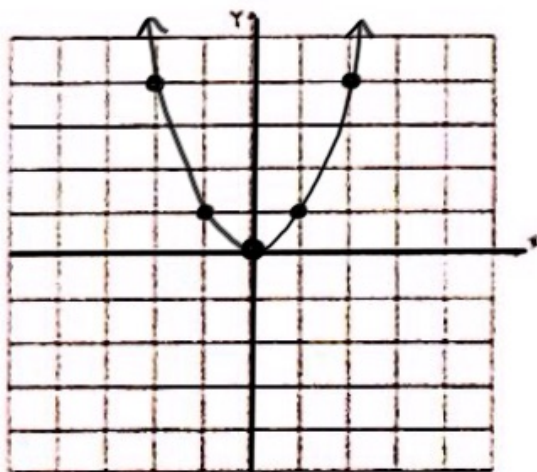
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### Quadratic

$$f(x) = x^2$$

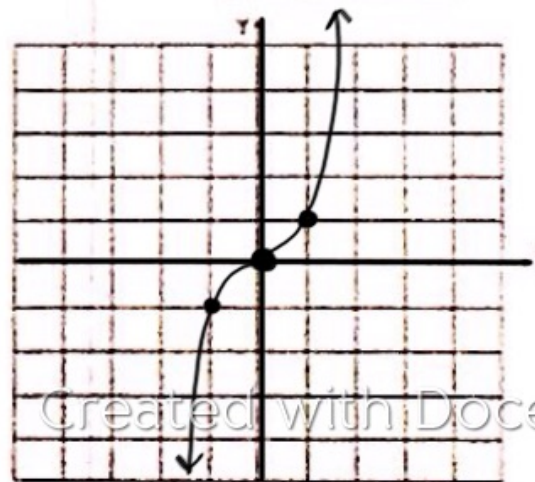
x	f(x)
-2	4
-1	1
0	0
1	1
2	4



### Cubic

$$f(x) = x^3$$

x	f(x)
-2	-8
-1	-1
0	0
1	1
2	8



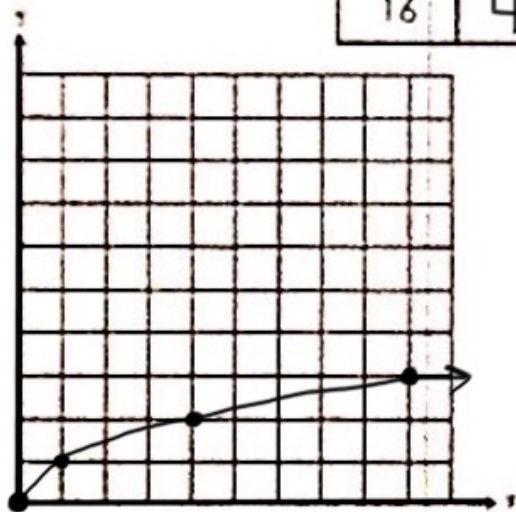
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### Square Root

$$f(x) = \sqrt{x}$$

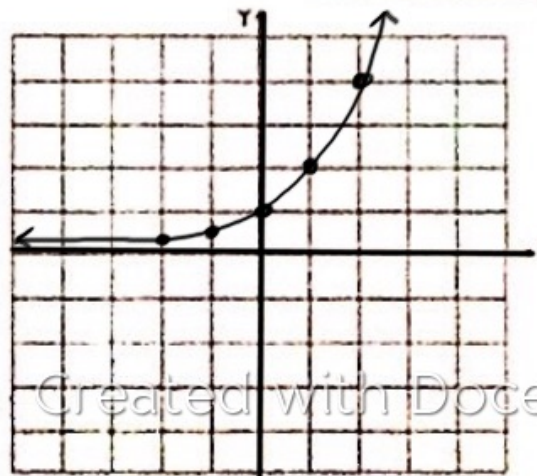
x	f(x)
0	0
1	1
4	2
9	3
16	4



### Exponential

$$f(x) = 2^x$$

x	f(x)
-2	$\frac{1}{4}$
-1	$\frac{1}{2}$
0	1
1	2
2	4



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In Problems 17-24, write the function whose graph is the graph of  $y = x^3$ , but is:

17. Shifted to the right 4 units  $(x-4)^3$

19. Shifted up 4 units  $x^3 + 4$

21. Reflected about the  $y$ -axis  $(-x)^3$

23. Vertically stretched by a factor of 4

$$4x^3$$

18. Shifted to the left 4 units  $(x+4)^3$

20. Shifted down 4 units  $x^3 - 4$

22. Reflected about the  $x$ -axis  $-(x^3)$

~~24. Horizontally stretched by a factor of 4~~

$$(4x)^3$$

In Problems 25-28, find the function that is finally graphed after the following transformations are applied to the graph of  $y = x^3$ .

(1) Shift up 2 units

(2) Reflect about the  $y$ -axis

(3) Reflect about the  $x$ -axis

26. (1) Reflect about the  $x$ -axis

(2) Shift right 3 units

(3) Shift down 2 units

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- 1. B
- 2. E
- 3. H
- 4. D
- 5. I
- 6. A
- 7. L
- 8. C
- 9. F
- 10. J
- 11. G → right 2  $f(x-2) \cdot f(x) \cdot |x-2|$
- 12. K
- 13. C
- 14. D
- 15. B
- 16. A

#2.  $f(n) - g(n)$

$$(4n+5) - 1(-2n+2)$$

$$\underline{4n} + \underline{5} + \underline{2n} - \underline{2}$$

$$\boxed{6n + 3}$$

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