

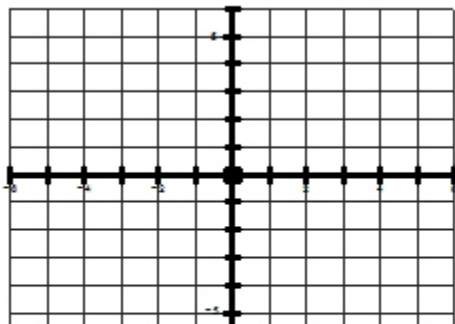
Graphing Functions: Transformations 2

For each function: Show the parent graph, use HRV to describe the transformation, graph the function, and label the vertex and x-intercept.

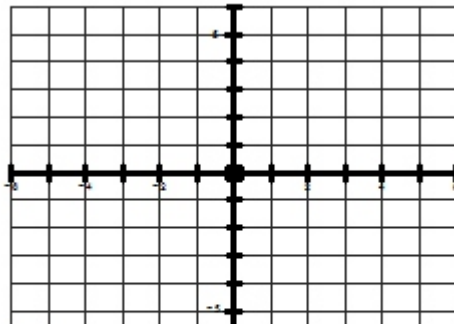
1) $y = (x + 3)^2$

2) $y = |x - 2|$

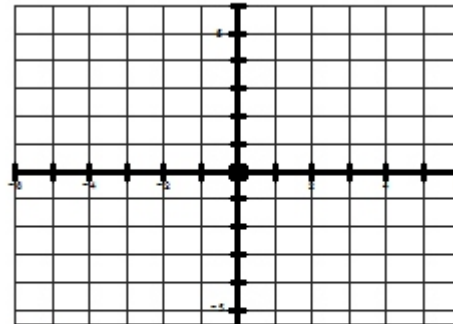
3) $y = \sqrt{x + 1}$



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V:



H:
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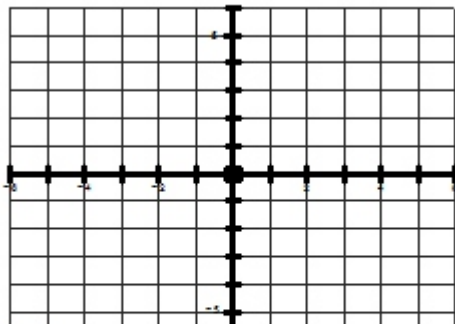


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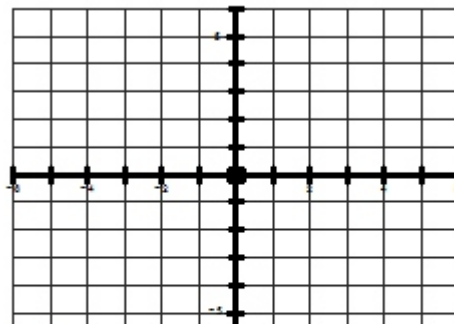
4) $y = |x| - 3$

5) $y = \sqrt{x} + 3$

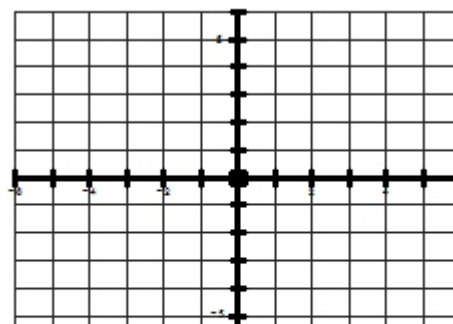
6) $y = x + 1$



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H:
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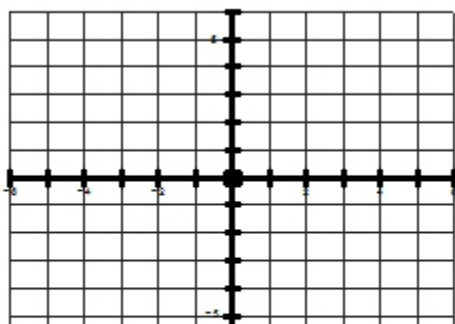
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7) $y = (x - 3)^2 - 1$

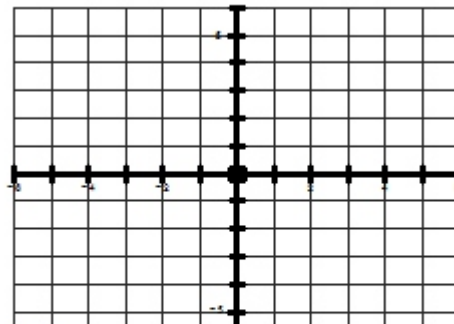
8) $y = (x + 1)^2 - 3$

9) $y = (x + 2)^2 + 2$

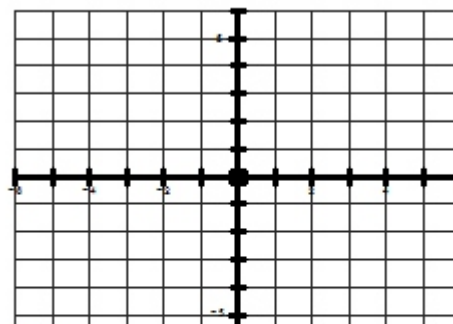
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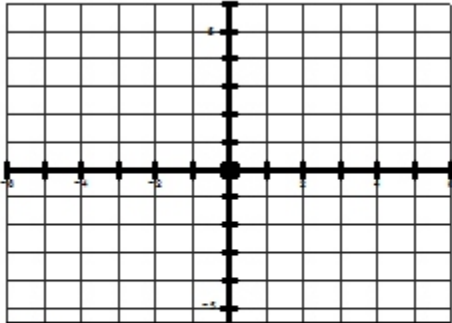
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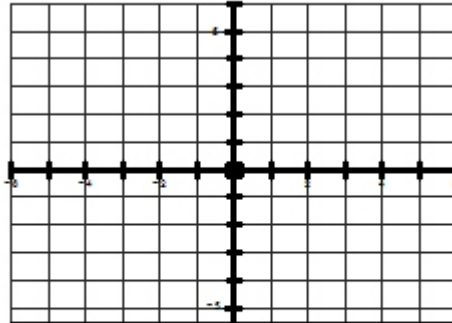
10) $y = \sqrt{x-5} - 3$

1



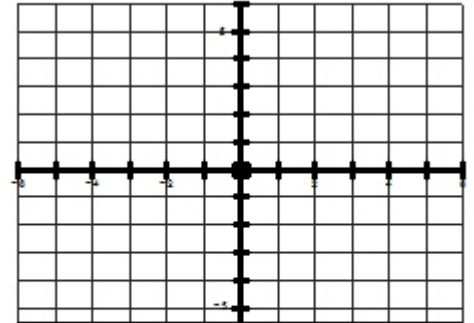
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11) $y = |x+1|+1$



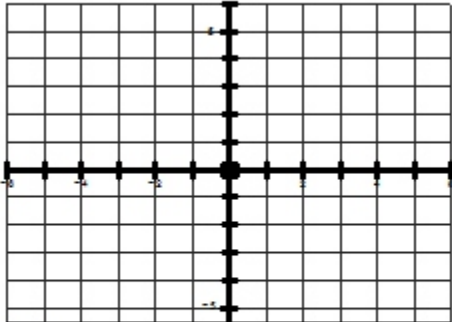
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12) $y = -2^{(x-1)} - 1$



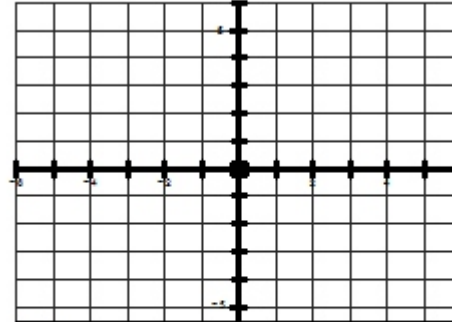
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13) $y = -(x-2)^2 + 5$



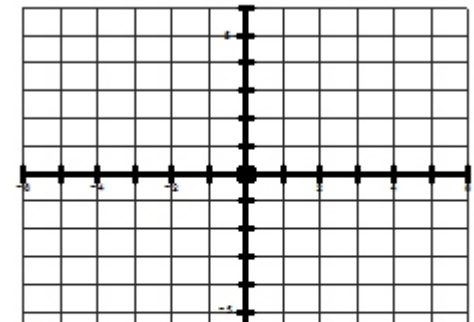
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14) $y = -x^2 + 1$



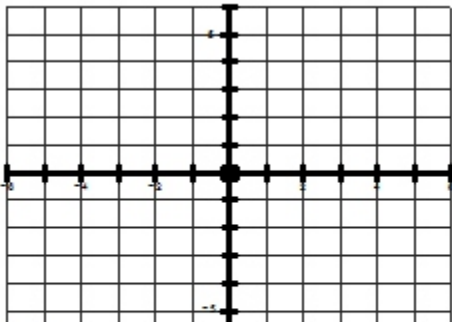
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15) $y = -(x+5)^2$



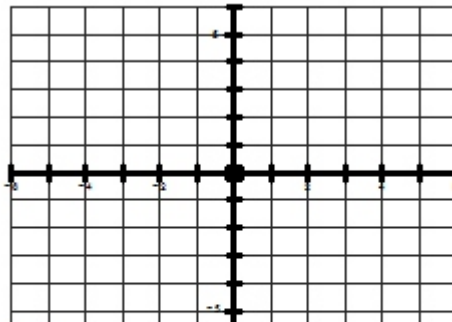
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16) $y = -2^{(x-3)}$



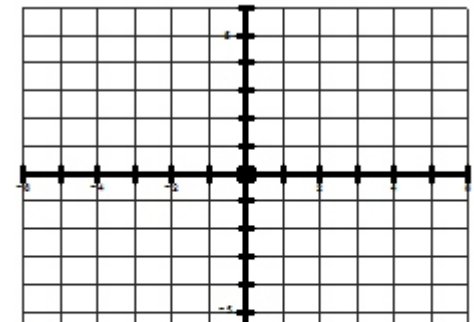
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17) $y = -2^x - 2$



H:
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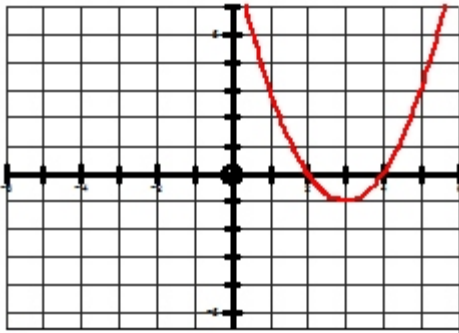
18) $y = -x - 3$



H:
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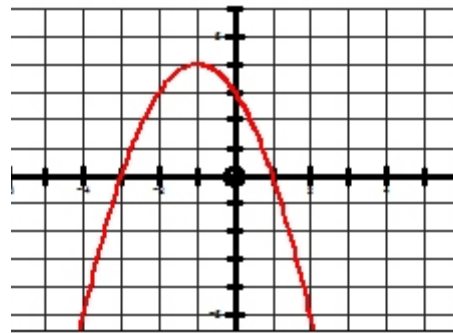
Given the graph of a function write the parent equation, describe the transformations, and give the equation.

19)



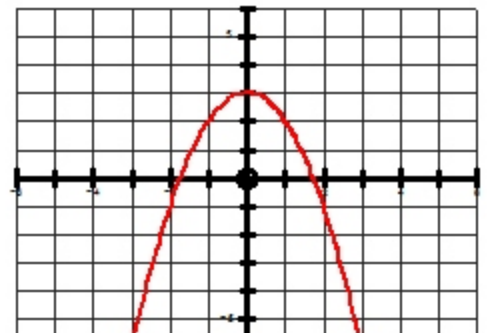
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20)



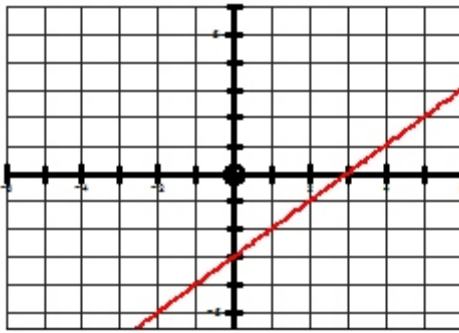
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21)



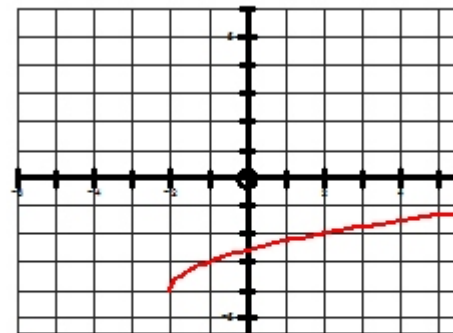
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22)



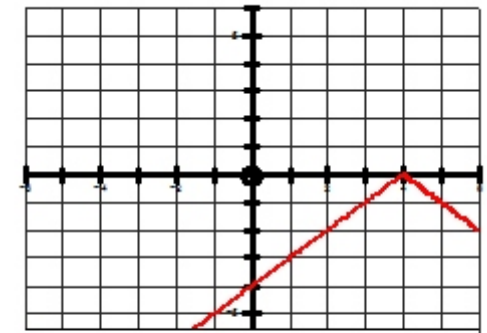
H:
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23)



H:
R:
V:

24)



H:
R:
V:

Factor the following polynomials.

25) $x^2 + 6x + 9$

26) $x^2 - 18x + 81$

27) $q^2 + 2q + 1$

28) $d^2 - 14d + 49$

29) $9t^2 + 24t + 16$

30) $4p^2 - 20p + 25$

31) $16r^2 - 56r + 49$

32) $25x^2 + 60x + 36$

Find the value of c that will make the following polynomials a perfect square.

33) $k^2 + 12k + c$

34) $q^2 - 8q + c$

35) $p^2 + 10p + c$

36) $k^2 - 20k + c$

37) $x^2 + 4x + c$

38) $m^2 - 2m + c$

39) $d^2 + 16d + c$

40) $x^2 - 26x + c$

Complete the square to convert each function to vertex form.

41) $y = x^2 + 6x$

42) $d = c^2 + 10c$

43) $n = m^2 + 8m$

44) $q = p^2 + 12p$

45) $k = j^2 + 6j + 5$

46) $y = x^2 + 10x + 9$

47) $v = t^2 + 8t + 12$

48) $y = x^2 + 12x + 27$