

# Test 4.1-4.5 and Factoring Review Key

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P.268 #5-47 ODD



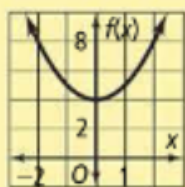
4. vertex:  $(-2, -6)$ ; axis of symmetry:  $x = -2$ ;  
 minimum:  $-6$ ; domain: all real numbers;  
 range:  $y \geq -6$

5. vertex:  $(3, 2)$ ; axis of symmetry:  $x = 3$ ;  
 maximum:  $2$ ; domain: all real numbers;  
 range:  $y \leq 2$

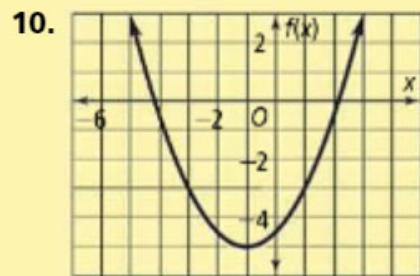
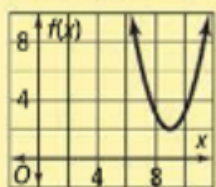
6. vertex:  $(1, 5)$ ; axis of symmetry:  $x = 1$ ;  
 minimum:  $5$ ; domain: all real numbers;  
 range:  $y \geq 5$

7. vertex:  $(-9, -4)$ ; axis of symmetry:  $x = -9$ ;  
 minimum:  $-4$ ; domain: all real numbers;  
 range:  $y \geq -4$

8. translation 4 units up



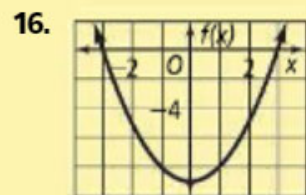
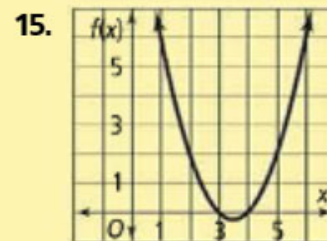
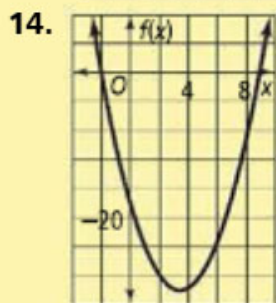
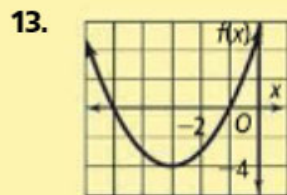
9. translation 9 units to the right  
 and 2 units up



vert. compression  
 by a factor of  $\frac{1}{2}$ ,  
 translation 1 unit to  
 the left and 5 units  
 down

11.  $y = 2(x - 2)^2 + 1$

12.  $y = \left(-\frac{1}{3}\right)(x + 5)^2 + 4$



17.  $f(x) = 4(x - 1)^2 - 2$

18.  $f(x) = (x - 4)^2 - 4$

19.  $f(x) = 8\left(x + \frac{1}{2}\right)^2 - 14$

20.  $f(x) = -2\left(x + \frac{3}{2}\right)^2 + \frac{29}{2}$

21. 1s; 25 ft

22.  $y = x^2 - 6x + 5$

23.  $y = -2x^2 + 8x - 8$

24.  $y = x^2 + 3x - 18$

25.  $y = -0.5x^2 + 2.5x - 7$

26.  $y = -0.0043x^2 + 0.3521x + 0.3691$

27.  $(x - 6)(x - 2)$

28.  $(3x - 4)(x + 5)$

29.  $-2(2x - 1)(x - 3)$

30.  $(x + 10)(x + 4)$

31.  $(x - 7)^2$

32.  $(3x + 5)^2$

33.  $4(3x - 2)(3x + 2)$

34.  $(5x - 2)(5x + 2)$

35.  $6x; 6x(x - 4)$

36.  $7; -7(2x^2 + 7)$

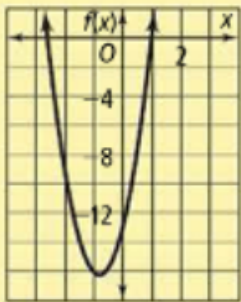
37.  $-2, 6$

38.  $-2, \frac{7}{2}$

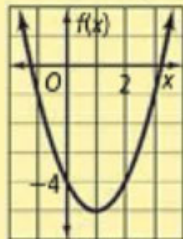
39.  $-4, 2$

40.  $-9, 2$

41.  $1, -2.6$ ;



44.  $3.236, -1.236$ ;



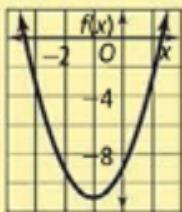
45.  $2, 4$

46. no real solutions

47.  $4.56, 0.44$

48.  $2, 4$

42.  $1.345, -3.345$ ;



43.  $1.618, -0.618$ ;

