Medium TAKS Practice Test Explanations

1. a) incorrect because when factoring into \((4x + 3)(3x - 2)\), you cannot simply say \(-3\) and 2 are roots; the factors must each be set equal to 0, and then \(x\) must be solved for

b) incorrect because when each factor was set equal to 0, the coefficient of \(x\) was subtracted first and then divided by the constant rather than the other way around

c) incorrect because the polynomial was not factored; the numbers were essentially made up/manipulated from the numbers in the polynomial

d) correct because the polynomial was first factored correctly, and then \(x\) was solved for

2. a) incorrect because the factors of the quadratic are given, not the solutions

b) correct because the polynomial was first factored correctly, and then \(x\) was solved for

c) incorrect because the incorrect factors of the quadratic are given, not the solutions

d) incorrect because one of the factors, \((2x - 5)\), was not solved for correctly when set equal to 0

3. a) correct because 0 was plugged in for \(y\); the quadratic was then factored correctly; each factor was set equal to 0, and \(x\) was solved for correctly

b) incorrect because the factor was \((x + 8)\), which means \(-8\) is a solution

c) incorrect because 0 was plugged in for \(x\), not \(y\)

d) incorrect because the factor was \((x + 7)\), which means \(-7\) is a solution

4. a) incorrect because 1 was not added to both sides

b) incorrect because the order of operations was not followed correctly; you must deal with exponents first, then multiply by any constants; also, 1 was not added to both sides

c) correct since 2 was plugged in for \(x\), the order of operations was performed correctly, and 1 was added to both sides

d) incorrect because the order of operations was not followed correctly; you must deal with exponents first, then multiply by any constants
5.  
a) incorrect because the x-values are under the y-values; also, the order of operations was not followed correctly  
b) correct since the values are in their appropriate places, and the order of operations was followed correctly when the x-values were plugged into the quadratic  
c) incorrect because when the negative x-values were plugged in, the negative coefficient on the quadratic term was ignored  
d) incorrect because when the negative x-values were plugged in, the negative coefficient on the quadratic term was ignored; also, the negative sign on the linear term was ignored

6.  
a) correct because the area is the length times the width; the 2 factors were also distributed correctly  
b) incorrect because the middle term was left out when multiplying the length by the width  
c) incorrect because of an incorrect sign on one of the middle terms when distributing, which caused the linear term to be incorrect  
d) incorrect because the length and width were partially added and partially multiplied

7.  
a) incorrect because the shift down to –2 was a total of 6 units, not 2  
b) incorrect because a change in the constant results in a shift up or down  
c) incorrect because a change in the constant results in a shift up or down  
d) correct because a change in the constant results in a shift up or down; specifically, to go from 4 to –2 is a change of 6 units

8.  
a) incorrect because (w + 6) is a factor, meaning w would equal –6, not +6; the width cannot be negative  
b) incorrect because the length and width were added and set equal to 13 rather than multiplied and set equal to 13  
c) correct because the length and width were multiplied correctly and set equal to 13; the equation was set equal to 0, re-factored and w solved for correctly  
d) incorrect because the length and width were not multiplied correctly; the middle term was left out; also, the answer is approximated, not exact

9.  
a) incorrect because 25x is the area of the Unshaded rectangle  
b) correct since the area is the length times the width, and the correct length and width were multiplied together  
c) incorrect because 5 is the width for the Unshaded rectangle  
d) incorrect because the perimeter of the entire rectangle (shaded plus unshaded parts) was found
10.

a) correct because everything was distributed correctly, and all like terms were properly combined
b) incorrect because the first two sets of parentheses were not distributed correctly; the middle term was left out
c) incorrect because the first two sets of parentheses were not distributed correctly; the middle term was left out; also, after distributing to each respective group, the two groups of terms were multiplied together rather than added
d) incorrect because the coefficients –2 and –3 were distributed to only the first term in each respective set of parentheses rather than to all the terms