**Factor Theorem**

<img src="1\_Q.gif" >@Yes, x-3 is a factor of p(x) since the remainder is 0.@No, x-3 is not a factor of p(x) since the remainder is 0.@Can’t determined @Partly true but in exception cases @ A

<img src="2\_Q.gif" >@x - 2 is a factor of x<sup>2</sup> - 3x + 5 since the remainder is 3.@x - 2 is not a factor of x<sup>2</sup> - 3x + 5 since the remainder is 3.@Can’t determined @Partly true but in exception cases@ A

<img src="3\_Q.gif" >@2 is a solution of x<sup>2</sup> - 3x + 5 since the remainder is 3.@2 is not a solution of x<sup>2</sup> - 3x + 5 since the remainder is 3.@Can’t determined @Partly true but in exception cases@ (B)

Match the following appropriately. It is important you can recognize the connection between factors and solutions.@x-1 is a factor of p(x).-1/2 is a solution of p(x).@x - 3 is a factor of p(x).-0 is a solution of p(x).@2x - 3 is a factor of p(x).-3/2 is a solution of p(x).@x is a factor of p(x).-3 is a solution of p(x).@ (C)

Match the following appropriately. It is important you can recognize the connection between factors and solutions.@5/3 is a solution of p(x).-x + 3 is a factor of p(x).@5 is a solution of p(x).-x - 5 is a factor of p(x).@-3 is a solution of p(x).-3x - 5 is a factor of p(x).@-5 is a solution of p(x).-x + 3 is a factor of p(x).@(B)

<img src="6\_Q.gif" >@1 is a solution@1 is not a solution@x -1 is a factor@x+1 is not a factor@ (B)

<img src="7\_Q.gif" >@x + 2...-0@-2...-is a solution of 5x<sup>2</sup> - 10x +40@The remainder is...-is a factor of 5x<sup>2</sup> - 10x - 40@5x<sup>2</sup> - 10x - 40 is being divided by...-x+2@ (D)

<img src="8\_Q.gif" >@x-7 is a factor of p(x).@x+7 is a factor of p(x).@-7 is a solution o p(x).@7 is a solution of p(x).@ (A)

<img src="9\_Q.gif" >@x + 6 is a factor of x<sup>3</sup> - x<sup>2</sup> - 40x +13@X + 6 is not a factor of x<sup>3</sup> - x<sup>2</sup> - 40x + 13 .@x-6 is not a factor of <sup>3</sup> - x<sup>2</sup> - 40x + 13.@x-6 is a factor of x<sup>3</sup> - x<sup>2</sup> - 40x +13.@ (B)

<img src="42\_Q.gif" >@5 is a solution of p(x) since the remainder is 0.@5 is a solution of p(x) since the remainder is 100.@5 is not a solution of p(x) since the remainder is 0.@5 is not a solution of p(x) since the remainder is 100@ (A)

<img src="11\_Q.gif" >@x-5 is a factor of p(x) since 5 was a solution.@x-5 is not a factor of p(x) since 5 was not a solution.@x+5 is not a factor of p(x) since 5 was not a solution.@x+5 is a factor of p(x) since 5 was a solution@ (A)

<img src="12\_Q.gif" >@-4 is a solution of x<sup>2</sup>+16@4 is a solution of x<sup>2</sup> + 16@x + 4 is not a factor of x<sup>2</sup> + 16@x - 4 is not a factor of x<sup>2</sup>+16@C

<img src="13\_Q.gif" >@True@False@Can’t determined @Partly true but in exception cases@ (A)

<img src="14\_Q.gif" >(A).-2 is a solution of p(x) since the remainder is equal to 0.@-2 is not a solution of p(x) since the remainder is equal to 1.@-2 is not a solution of p(x) since the remainder is equal to 33.@2 is not a solution of p(x) since the remainder is equal to -1@(C)

<img src="15\_Q.gif" >@The remainder is 18.@The remainder is 0.@The remainder is 108.@The remainder is 28.@ (A)

<img src="16\_Q.gif" >@3 is a solution of 2x<sup>3</sup> - 15x + 9@3 is not a solution of 2x<sup>3</sup> - 15x + 9.@-3 is a solution of 2x<sup>3</sup> - 15x + 9.@-3 is not a solution of 2x<sup>3</sup> - 15x + 9@ (B)

<img src="17\_Q.gif" >@x - 3 is not a factor of 2x<sup>3</sup> - 15x + 9.@x-3 is a factor of v2x<sup>3</sup> - 15x + 9.@x + 3 is not a factor of 2x<sup>3</sup> - 15x + 9.@x + 3 is a factor of 2x<sup>3</sup> - 15x + 9@ (A)

Assume that a polynomial has a solution at the x-value 4.Which of the following must be a factor of that same polynomial?@4x@x - 4@x + 4@None of these @ (B)

Assume that x-2 is a factor of a polynomial. Which x-value must be a solution of that same polynomial?@The x-value -2@The x-value 2@The x-value 0@None of these (B)

<img src="20\_Q.gif" >@C would need to be equal to 0.@C would need to be equal to 12.@C would need to be equal to -12.@C would need to be equal to 300.@ (B)