2015 Mathematical Methods (CAS) Written examination 2 solutions

Question 14

$p+2p+3p+4p+5p=1$

$p=\frac{1}{15}$

$E(X)=\frac{1}{15}+\frac{4}{15}+\frac{9}{15}+\frac{16}{15}+\frac{25}{15}=\frac{11}{3}$

D

Question 15

$2\int_0^5(g(x))dx+\int_0^5(ax)dx=90$

$a\int_0^5(ax)dx=50$

$a=4$

B

Question 16

$f'(x)=\int g(x)dx$

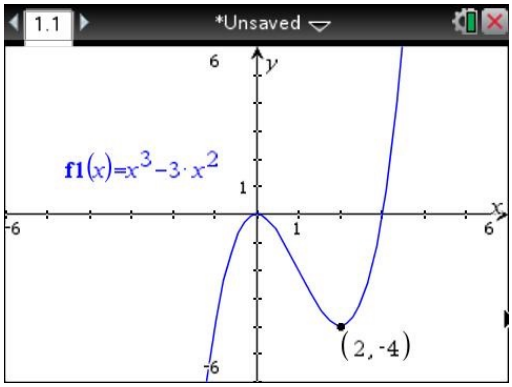
$max^{m-1}=\frac{b}{n+1}x^{n+1}+c$

$ma=\frac{b}{n+1}$

$m(n+1)=\frac{b}{a}$

D

Question 17



If a constant between 0 and 4 is added to $f1(x)$ then the new curve, $f(x)$, will have three distinct *x*-intercepts.

D

