AM Objective #11: Evaluate functions for given values

1. Let $f(x)=|x|+8$. Find $f(-7)$.

[A] 15 [B] -15 [C] 1 [D] none of these

$f(-7)=|-7|+8$

$=7+8=15$

2. If $f(x)=x^2-5x$, find $f(w+2)$.

[A] w^2-w-6 [B] w^2+w-6 [C] $2w^2+w-4$ [D] none of these

$f(w+2)=(w+2)^2-5(w+2)$

$=(w+2)(w+2)-5w-10$

$=w^2+4w+4-5w-10$

$=w^2-w-6$

3. Let $f(x)=7x+3$. Find $\frac{f(x)-f(a)}{x-a}$, if $x\neq a$.

[A] $\frac{7x-7a+6}{x-a}$ [B] 7 [C] $\frac{7x+7a+6}{x-a}$ [D] 5

$\frac{7x+3-(7a+3)}{x-a}$

$\frac{7x+3-7a-3}{x-a}$

$\frac{7x-7a}{x-a}=\frac{7(x-a)}{(x-a)}=7$

4. Let $f(x)=8x-2$. Find $\frac{f(x)-f(a)}{x-a}$, if $x\neq a$.

$\frac{8x-2-(8a-2)}{x-a}$

$\frac{8x-2-8a+2}{x-a}$

$\frac{8x-8a}{x-a}=\frac{8(x-a)}{(x-a)}=8$