64. Solution: A

Let X denote claim size. Then $E[X] = [20(0.15) + 30(0.10) + 40(0.05) + 50(0.20) + 60(0.10) + 70(0.10) + 80(0.30)] = (3 + 3 + 2 + 10 + 6 + 7 + 24) = 55$

$E[X^2] = 400(0.15) + 900(0.10) + 1600(0.05) + 2500(0.20) + 3600(0.10) + 4900(0.10) + 6400(0.30) = 60 + 90 + 80 + 500 + 360 + 490 + 1920 = 3500$

$Var[X] = E[X^2] – (E[X])^2 = 3500 – 3025 = 475$ and $\sqrt{Var[X]} = 21.79$.

Now the range of claims within one standard deviation of the mean is given by

$[55.00 – 21.79, 55.00 + 21.79] = [33.21, 76.79]$

Therefore, the proportion of claims within one standard deviation is

$0.05 + 0.20 + 0.10 + 0.10 = 0.45$.