In class ex

$X_1 \sim N(100, 9)$
$X_2 \sim N(200, 16)$
$X_3 \sim N(50, 4)$
} are independent

Find.

$P(3X_1 + 5X_2 - 2X_3 > 1210)$

$3X_1 + 5X_2 - 2X_3 \sim N(1150, 385)$

$$z = \frac{3X_1 + 5X_2 - 2X_3 - 1150}{\sqrt{385}}$$

$$P(z > \frac{1210 - 1150}{\sqrt{385}}) = P(z > 2.167$$

$P(3X_1 + 5X_2 - 2X_3 > 1210 = 0.015$