DoNow practice for familiarity and speed Name:

Work these problems rapidly on lined paper, developing a standard method
(skip those you don't know how to start)

1. Given perpendicular vectors $\mathbf{a} = \begin{pmatrix} 5 \\ 4 \\ -3 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 2 \\ k \\ 4 \end{pmatrix}$. Find k.

2. Given the frequency table below, write down $\bar{x}$, σ, median, Q_1, Q_3, the IQR, and range.

x	5.1	5.2	5.4	5.5
Freq	4	3	6	1

3. Given the bivariate data shown in the table below, perform a linear regression with $y = ax + b$.

x	98	112	140	150
y	54	59	78	81

   (a) Write down, a, b, r, and characterize r.

   (b) Using the fitted linear model find y for $x = 142$.

4. Two events A and B are such that $P(A) = 0.2$ and $P(A \cup B) = 0.5$.

   (a) Given that A and B are mutually exclusive, find $P(B)$.

   (b) Given that A and B are independent, find $P(B)$.

Binomial distribution

5. operations with complements, i.e. $1 - B_{CDF}(10, 8, 0.25) = B_{CDF}(10, 1, 0.75)$