ta to make a box-and-whisker plot.

56, 24, 35, 37, 81, 63, 75

25, 37 56 (63) 71 75, 79 81

med   77

Q3

45   55   65   75   85

9. 210, 195, 350, 250, 260, 300

195   210   250 260

50   100   150   200   25

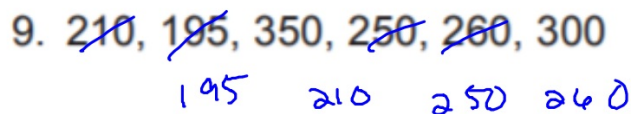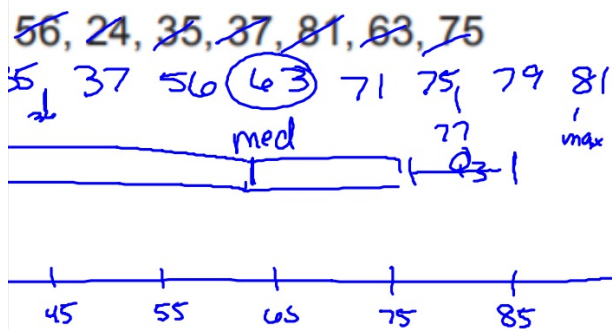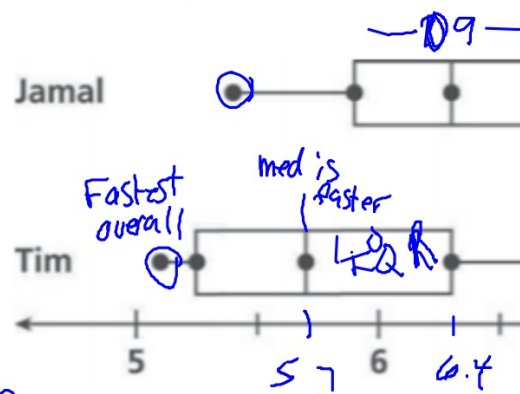## ing times of two runners for several one-mile races, in minutes, are
d-whisker plots.

as the faster median time? __Tim__

as the slowest time? __Jamal__

l, who is the faster runner? Explain.

ral the fastest time (minimum
smaller than J's) and his slowest
e (at the maximum) was lower than
                                        J's

Jamal

Fastest
overall

med is
faster

Tim

5   5.7   6   6.4

573

mounts of Cathy's last six clothing purchases were $109, $72, $99, $15,
For each question, choose the mean, median, or mode, and give its value

Which value describes the average of Cathy's purchases? ___mean = $80

Which value would Cathy tell her parents to convince them that she is not
much money on clothes? Explain.

mean: it makes it look like Cathy spends $80.50 on ave
It is lower than the median

Which value would Cathy tell her parents to convince them that she needs
her allowance? Explain.

mode: it's a higher number — the median won't give her
as much to spend

15   72   89   99   99   109

mean- 80.5
med- 94
mode- 99

#2 $A = \begin{pmatrix} -5 \\ 2 \\ 4 \end{pmatrix}$, $B = \begin{pmatrix} 6 \\ 0 \\ 6 \end{pmatrix}$ and $C = \begin{pmatrix} 8 \\ 10 \\ 1 \end{pmatrix}$

show $\triangle ABC$ is isosceles, calculate angle $C\hat{A}B$

$$\overrightarrow{AB} = \begin{pmatrix} 6 \\ 0 \\ 6 \end{pmatrix} - \begin{pmatrix} -5 \\ 2 \\ 4 \end{pmatrix} = \begin{pmatrix} 11 \\ -2 \\ 2 \end{pmatrix}$$

$$|\overrightarrow{AB}| = \sqrt{11^2 + (-2)^2 + 2^2} = \sqrt{129}$$

$$\overrightarrow{BC} = \begin{pmatrix} 8 \\ 10 \\ 1 \end{pmatrix} - \begin{pmatrix} 6 \\ 0 \\ 6 \end{pmatrix} = \begin{pmatrix} 2 \\ 10 \\ -5 \end{pmatrix}$$
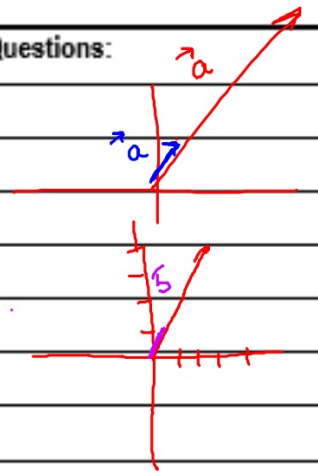
isosceles

$$\cos^{-1}\left(\frac{129 + 242 - 129}{2\sqrt{129}\sqrt{242}}\right) \quad |\overrightarrow{BC}| = \sqrt{2^2 + 10^2 + (-5)^2} = \sqrt{129}$$

$C\hat{A}B \approx 46.8^\circ$

$$(\sqrt{129})^2 = (\sqrt{129})^2 + (\sqrt{242})^2 - 2(\sqrt{129})(\sqrt{242}) \cos\theta$$

Cornell Notes	**Topic/Objective:** UNIT VECTORS		**Name:**
AVID Decades of College Dreams			**Class/Period:** 3
			Date: 9/12/17

Essential Question:

What is a unit vector and how is it used?

Questions:	**Notes:**
	A unit vector is a vector of length 1 in the direction of $\vec{a}$ found by using the formula: $\dfrac{\vec{a}}{|\vec{a}|}$
	Ex Find the unit vector in the same direction as the vector $3i + 4j$
	the vector $3i+4j$ has length $\sqrt{3^2 + 4^2} = \sqrt{25} = 5$
	Thus, a vector of length 1 in the direction of $3i+4j$ is $\frac{1}{5}(3i+4j) = \frac{3}{5}i + \frac{4}{5}j$

Questions:	Notes:
	A VECTOR OF LENGTH K IN THE DIRECTION OF $\vec{a}$ IS FOUND BY USING THE FORMULA $$K \frac{\vec{a}}{|\vec{a}|}$$
HW p.420 12F 2,4,6,8,9	Ex) Find the vector of length 10 in the same direction as $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$ $3i - 1j$ has length $\sqrt{3^2 + (-1)^2} = \sqrt{10}$ $10 \left(\dfrac{3i - j}{\sqrt{10}} \right)$ $\dfrac{\sqrt{10}}{\sqrt{10}} \cdot \dfrac{10}{\sqrt{10}} \begin{pmatrix} 3 \\ -1 \end{pmatrix}$ $\dfrac{\sqrt{10}}{10} \begin{pmatrix} 3 \\ -1 \end{pmatrix}$