

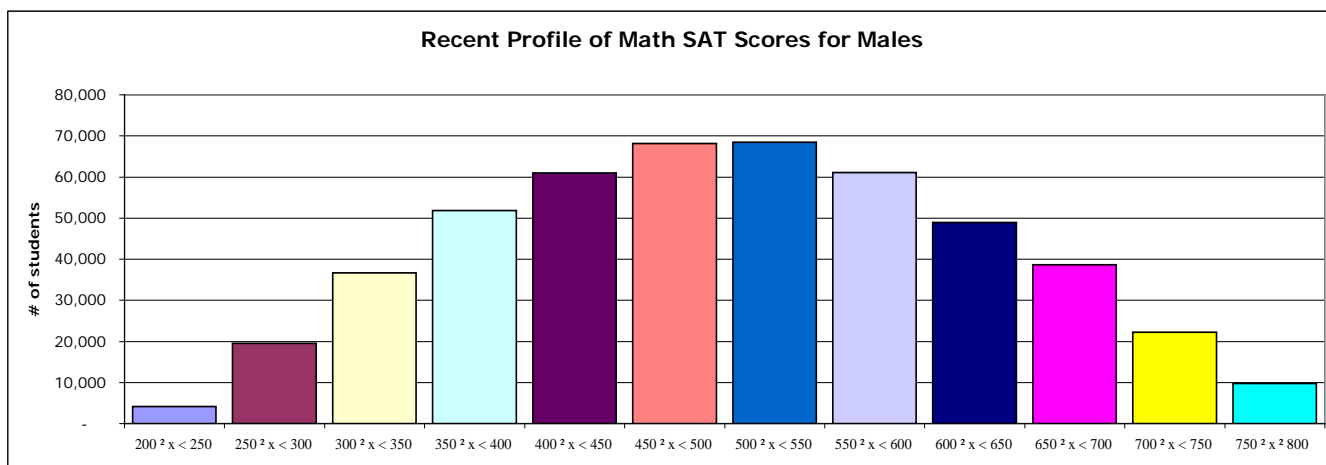
SAT Mathematics

Entrance to American colleges and universities is affected by a student's performance on such tests as the SAT (Scholastic Aptitude Test). The following tables show the number of males and females in a recent year whose scores on the math SAT fell within each of the given intervals. Corresponding graphs are shown below. [Source: College Board]

Interval	Male SAT
$200 \leq x < 250$	4,117
$250 \leq x < 300$	19,581
$300 \leq x < 350$	36,642
$350 \leq x < 400$	51,814
$400 \leq x < 450$	60,939
$450 \leq x < 500$	68,166
$500 \leq x < 550$	68,435
$550 \leq x < 600$	61,073
$600 \leq x < 650$	48,980
$650 \leq x < 700$	38,634
$700 \leq x < 750$	22,247
$750 \leq x \leq 800$	9,792
Total	490,420

The following graphs were made with Microsoft Excel. You may duplicate these histograms on your TI-83 calculator, and superimpose the two graphs. We suggest the following values for your window settings: [0, 1000, 50, 0, 90000, 10000, 1].

In all percent calculations, round to the nearest percent.



- Describe the distribution of the male scores. Is the distribution nearly symmetric or skewed (slightly) positively or negatively? _____
- Choose the most reasonable estimate for the mean.

460 480 500 520 540
- How many males scored below 250 on the math SAT? _____
 - How many males scored below 400? _____
 - What percent scored below 400? _____
 - What percent of males scored 700 or above? _____
 - Can you determine what percent of males scored above 600 on the math SAT? _____ Explain.

Refer to the chart and graph below.

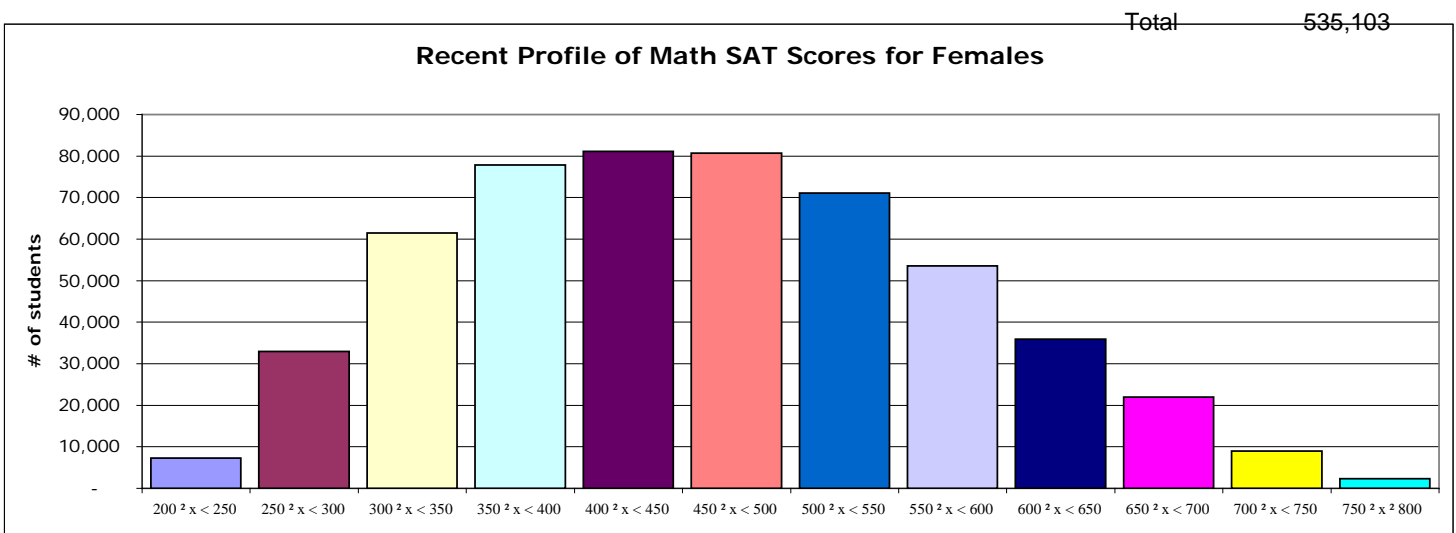
4. Describe the distribution of the female scores.

Is the distribution nearly symmetric or skewed (slightly) positively or negatively? _____

5. Choose the most reasonable estimate for the mean.

460 480 500 520 540

Interval	Female SAT
$200 \leq x < 250$	7,241
$250 \leq x < 300$	32,916
$300 \leq x < 350$	61,437
$350 \leq x < 400$	77,848
$400 \leq x < 450$	81,151
$450 \leq x < 500$	80,683
$500 \leq x < 550$	71,084
$550 \leq x < 600$	53,584
$600 \leq x < 650$	35,887
$650 \leq x < 700$	21,950
$700 \leq x < 750$	8,979
$750 \leq x \leq 800$	2,343



6. (a) How many females scored below 250 on the math SAT? _____
- (b) How many females scored below 450? _____
- (c) What percent scored below 450? _____
- (d) What percent of females scored 650 or above? _____
- (e) Can you determine what percent of females scored 700 or above on the math SAT?
 _____ Explain.
7. What conclusions can we make about the aptitude of males versus females? What factors influence test results besides aptitude?