CHAPTER 12 ANSWERS

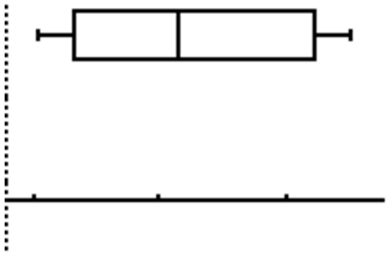
PROBLEM SET 12-3

1. $\bar{x}$ = 4.36, M = 3, Mode = 1

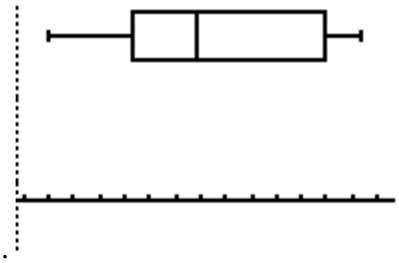
2. $\bar{x}$ = 338.5, M = 316, No Mode

3. $\bar{x}$ = 600.3, M = 535.5, Mode = 499

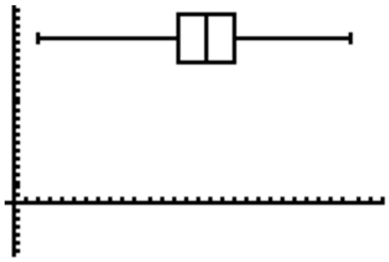
4.



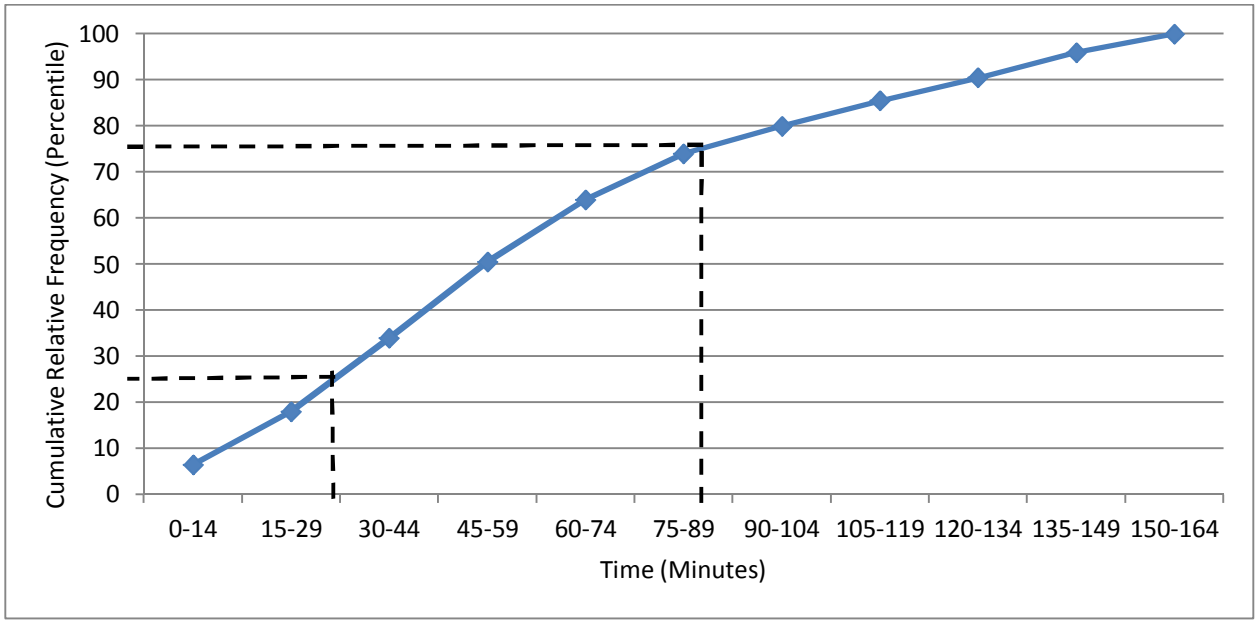
5.



6.



7.



8. 95 minutes

9. $100 - 48 = 52\%$

10. Outlier $> Q_3 + 1.5(IQR) > 5.2 + 3.9 > 9.1$; 9.8 which raises the mean

11. Outlier $< Q_1 - 1.5(IQR) < 14 - 1.5(5) < 6.5$; 0 which lowers the mean

PROBLEM SET 12-4

1.	5, 2.5	**2.**	105, 57	**3.**	704, 461
4.	258.6, 246.6	**5.**	15.1, 3.8	**6.**	2.8
7.	– 1.4	**8.**	0	**9.**	– 2.8

10. 15.4, 54.7; the bird speeds are more spread-out than the cat speeds

PROBLEM SET 12-5

1.	$\pm 7\%$	**2.**	$\pm 4\%$	**3.**	$\pm 3\%$
4.	156	**5.**	400	**6.**	10,000
7a)	63%	**b)**	$\pm 5\%$	**c)**	58% to 68%
8a)	6%	**b)**	$\pm 25\%$	**c)**	0% to 31%

9. Results cannot be trusted because the sample was not a random sample… it was a voluntary sample- the people who call-in are likely to over-represent or under-represent certain viewpoints.

10. Sample A was the largest sample because it has the smallest standard deviation.

11. $22,240

12. 51 black bears

PROBLEM SET 12-6

1.	.2824	**2.**	.8891	**3.**	.1109
4.	.2461	**5.**	.2051	**6.**	.6230

7. $P(X \leq 4$ out of 30) = .7705 so 77% of classrooms will have enough left-handed desks

8. P(Getting 5 correct) = 2.6% and P(Getting 4 correct) = 8.8% so it would rare to get 5 or more questions correct by guessing

PROBLEM SET 12-7

1.	79.1	**2.**	56.3	**3.**	68%
4.	97.5%	**5.**	50%	**6.**	2.5%
7.	64 inches to 74 inches	**8.**	16%	**9.**	84th Percentile
10.	47.5%	**11.**	99.7%	**12.**	81.5%
13.	50%	**14.**	84%	**15.**	97.5%
16.	209	**17.**	41	**18.**	127
19.	480 tubs	**20.**	.9978	**21.**	.0022
22.	.9515	**23.**	.9493	**24.**	.52
25.	– 1.04	**26.**	.84	**27.**	– 1.28
28.	65.54%	**29.**	5.48%	**30.**	IQ $\geq$ 127