

Here's the table for our scores:

Score (P)	Rank (C)	C-.5	$R = 100 \frac{(C-.5)}{20}$
55	1	0.5	2.5
56	2	1.5	7.5
56	3	2.5	12.5
57	4	3.5	17.5
60	5	4.5	22.5
60	6	5.5	27.5
61	7	6.5	32.5
61	8	7.5	37.5
62	9	8.5	42.5
64	10	9.5	47.5
72	11	10.5	52.5
72	12	11.5	57.5
76	13	12.5	62.5
76	14	13.5	67.5
76	15	14.5	72.5
77	16	15.5	77.5
77	17	16.5	82.5
77	18	17.5	87.5
79	19	18.5	92.5
79	20	19.5	97.5

$$P = PL + (PH - PL) \frac{(R - RL)}{(RH - RL)}$$

Given a rank of $R = 50$ what is P_{50} ? (median)

$$PL = 64 \quad RL = 47.5 \quad R = 50$$

$$PH = 72 \quad RH = 52.5$$

$$P = 64 + (72 - 64) \frac{50 - 47.5}{52.5 - 47.5} = 68$$

$$R = RL + (RH - RL) \frac{(P - PL)}{(PH - PL)}$$

$$P_{50} = 68$$

Given a point (score) of 77.8 what is the rank for this score?

$$PL = 77 \quad RL = 87.5 \quad P = 77.8$$

$$PH = 79 \quad RH = 97.5$$

$$R = 87.5 + (97.5 - 87.5) \frac{77.8 - 77}{79 - 77} = 91.5$$

$$P_{91.5} = 77.8$$