



# Michigan Mathematics Prize Competition



## Item Analysis for the Forty-Third Michigan Mathematics Prize Competition Part I, October 13, 1999

problem number	correct answer	percent A	percent B	percent C	percent D	percent E	percent other
1	E	8.0	22.4	21.8	15.6	<b>31.5</b>	0.7
2	B	12.9	<b>28.2</b>	50.6	5.6	2.4	0.3
3	B	23.0	<b>51.2</b>	8.6	7.2	9.7	0.3
4	B	7.0	<b>33.5</b>	8.6	42.0	8.2	0.8
5	C	21.8	20.2	<b>12.7</b>	4.7	39.2	1.3
6	A	<b>52.8</b>	20.3	11.1	9.2	5.9	0.7
7	D	18.4	17.2	20.4	22.6	<b>19.5</b>	1.9
8	A, C	<b>40.9</b>	15.9	<b>25.7</b>	6.5	10.6	0.4
9	D	10.1	24.8	14.7	<b>30.9</b>	18.3	1.2
10	A	<b>55.9</b>	6.8	8.6	23.9	4.4	0.3
11	C	0.9	16.6	<b>9.7</b>	70.9	1.8	0.1
12	D	27.4	21.5	17.1	<b>25.0</b>	7.4	1.5
13	C	2.7	10.3	<b>33.7</b>	6.2	46.2	0.9
14	A	<b>33.0</b>	22.3	19.3	10.3	14.5	0.5
15	B	17.5	<b>33.1</b>	17.3	18.5	12.4	1.1
16	C	14.0	4.7	<b>69.4</b>	8.1	3.4	0.3
17	C	11.0	13.2	<b>13.9</b>	11.5	49.4	1.0
18	A	<b>20.3</b>	16.3	16.9	26.5	19.2	0.8
19	B	11.1	<b>42.4</b>	15.4	23.2	7.1	0.8
20	C	20.8	39.6	<b>15.1</b>	9.0	13.9	1.6
21	B	6.0	<b>42.8</b>	3.3	29.2	18.6	0.2
22	D	16.5	18.2	32.0	<b>30.5</b>	2.0	0.8
23	C	5.6	37.1	<b>13.7</b>	38.4	4.0	1.0
24	E	2.0	2.6	7.2	17.7	<b>70.1</b>	0.5
25	B	22.8	<b>25.3</b>	18.8	16.7	15.8	0.6
26	C	9.3	16.0	<b>25.5</b>	18.8	28.9	1.5
27	A	<b>21.0</b>	16.7	29.9	22.5	8.3	1.5
28	A	<b>27.2</b>	20.4	21.2	25.3	5.3	0.6
29	E	17.6	14.8	22.4	12.7	<b>31.8</b>	0.8
30	B	19.9	<b>20.3</b>	5.3	2.2	51.9	0.5
31	E	22.2	10.9	24.2	27.0	<b>15.4</b>	0.4
32	A	<b>32.7</b>	23.0	14.5	9.0	19.7	1.0
33	B	8.4	<b>15.5</b>	18.4	23.9	32.5	1.3
34	B	17.4	<b>21.1</b>	20.5	9.6	29.8	1.6
35	A	<b>31.8</b>	11.2	14.3	18.2	23.5	1.1
36	C	8.1	12.8	<b>33.3</b>	14.7	29.9	1.2

37	A	<b>29.0</b>	10.7	14.0	11.4	33.3	1.6
38	A	<b>56.2</b>	16.3	6.6	3.0	17.4	0.6
39	A	<b>27.4</b>	20.7	20.2	9.8	20.4	1.5
40	C	13.2	17.2	<b>37.4</b>	24.5	6.2	1.6

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Modified December 1, 1999, by [Robert Messer](#)