

PSAT 8/9: Math Examples- ERROR ANALYSIS Problems- Answer KEY

#1. Error Analysis: Michael's solution was 0.53. Below is how he entered his response. Explain the mistake he made. Then enter the correct way.

Michael should NOT have included the zero prior to the decimal. Since there are 4 columns and only 3 characters to enter in the scantron, he should have entered ".53" either aligned to the right or left.

0	.	5	3
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

*OR
you can
align it
right*

.	5	3	
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Correct Response:

#2. Error Analysis: Grace was asked to reduce the fraction $\frac{30}{1,000}$. Below is how she entered her response. Explain the mistake she made. Then enter the correct way.

$\frac{30}{1,000} = \frac{3}{100}$. The student entered only what they could of the fraction since there was not enough boxes. However, the value of the fraction has changed. The student should have entered the number as the decimal ".003" by not including the zero before the decimal.

3	/	1	0
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

"03"

*OR
You can
align it
left*

.	0	3	
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Correct Response:

#3. Error Analysis: Tyler's solution was 12.90. Below is how he entered his response. Explain the TWO mistakes he made. Then enter the correct way.

1. Tyler should NOT have included placed two numbers in the same column. There should only be one number/symbol per column. He should have entered "12.9".
2. Tyler did not bubble in any of his numbers/symbols. In order for your answer to be correct, you MUST darken in the ovals to all numbers/symbols correctly.

12	.	9	0
	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1	2	.	9
	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Correct Response:

#4. Error Analysis: Jamie was asked to simplify the exponent (-5^2) . Below is how she entered her response. Explain the mistake she made. Then enter the correct way.

Jamie's answer was -25. The correct answer should be positive 25. She should not have entered the negative. There are NO negative ANSWERS, as you have no bubble for the minus/negative sign.

-	2	5	
	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	2	5	
	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OK
align left ←

Correct Response:

#5. Error Analysis: Emily was given the problem $\frac{5}{2} * \frac{7}{3}$. Below is how she entered her response. Explain the mistake she made. Then enter the correct way.

Emily should have entered the answer as an improper fraction (35/6), instead of changing it to the mix number (5 $\frac{5}{6}$). You cannot record a mix number. The computer will read the answer a 55/6.

5	5	/	6
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

$$\frac{5}{2} \cdot \frac{7}{3} = \frac{35}{6} = 5\frac{5}{6}$$

3	5	/	6
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Correct Response:

#6. Error Analysis: Ben was asked to list multiples of 2 that are less than 20. Below is how he entered his response. Explain the mistake he made. Then enter the correct way.

Ben should have only bubbled in ONE answer. If you come up with more than one solution any of the correct answers will be graded as correct. For example, Ben should have only answered, 18 or 16, or 4, etc.

4	6	8	10
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

OR
align left →

		1	8
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Correct Response:

#7. Error Analysis: Jake was asked to simplify $\frac{3}{9}$ to a decimal. Below is how he entered his response. Explain the mistake he made. Then enter the correct way.

Jake should NOT have rounded his answer UNTIL all 4 boxes were COMPLETELY used. He should have entered ".334".

.	0	6	
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

$$\frac{29}{500} = 0.058$$

.	0	5	8
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Correct Response: