

November Extended Constructed Response (ECR)

Name:

Mike receives two job offers from companies that sell office machines to businesses.

\* *Office Essentials* offers him a salary of \$2500 per month plus a commission \$125 every machine he sells.

\* *Everything Office* offers him a salary of \$2000 per month plus a commission of \$150 for every machine he sells.

Part A: Let  $M$  represents the total monthly earnings, in dollars, and  $n$  represents the number of machines sold in month. For each company, write an equation that represents the relationship between  $M$  and  $n$ .

Part B: Compare Mike's possible earnings at the two companies. How many machines would he have to sell for the earnings at both companies to be the same? If Mike can sell 30 machines in a month, which company will provide higher salary? (Show your work or explain your reasoning)

Advanced Topics in Algebra I

Score Rubric

Part A	
Score	Description
2	<p>Student response includes the following 2 elements.</p> <ul style="list-style-type: none"> <li>• Modeling component = 2 points                             <ul style="list-style-type: none"> <li>o Correct equation for Office Essentials</li> <li>o Correct equation for Everything Office</li> </ul> </li> </ul> <p>Sample Student Response:  <math>M = 125n + 2,500</math> represents the monthly earnings for the Office Essentials job.  <math>M = 150n + 2,000</math> represents the monthly earnings for the Everything Office job.</p>
1	Student provide one correct equation
0	Student response is incorrect or irrelevant
Part B	
Score	Description
3	<p>Student response includes the following 3 elements.</p> <p>Modeling component = 3 points</p> <ul style="list-style-type: none"> <li>* Calculations or reasoning to show that the total earnings at the two companies are equal when 20 machines are sold</li> <li>* Logical progression (showing work) toward problem solving</li> <li>* State that Everything Office will provide higher salary for selling 30 machines by showing work or explanation to support the statement.</li> </ul>
2	Student response includes 2 of 3 elements
1	Student response includes 1 of 3 elements
0	Student response is incorrect or irrelevant

Genesis Convert Table

Task Point	Genesis Score
0	55
1	59
2	69
3	79
4	89
5	100