MCAP Maryland Comprehensive Assessment Program

Practice Test Answer and Alignment Document
Mathematics – Algebra 2
Pencil-and-Paper

The following page includes the answer key for all machine-scored items, followed by the rubric for the hand-scored item.

- The rubric shows sample student responses. Other valid methods for solving the problem can earn full credit unless a specific method is required by the item.
- In items where the scores are awarded for full and partial credit, the definition of partial credit will be confirmed during range-finding (reviewing sets of real student work).
- If students make a computation error, they can still earn points for reasoning or modeling.

Unit 1

Item Number	Answer Key	Evidence Statement Key/Content Scope
1. VH635998	D	A.CED.1
2. VR002985	-12	A.APR.1
3. VR063157	D	F.TF.1/2
4. VR063169	B, D	N.RN.3

Unit 2

Item Number	Answer Key	Evidence Statement Key/Content Scope
1. VH820131	B, C	F.LE.5
2. VR024312	1/15	F.BF.1a/1b
3. VR063189	B, C, D, E	F.IF.9
4. VR024475	See rubric	F.LE.1/2/3

Rubric starts on the next page.

4	Model Solution **Part A** The situation is best modeled with an exponential function, because the resale value is decreasing at a constant percent rate of 15% per year. **Part B** The situation can be modeled by the function $v(t) = p(0.85)^t$, where p is the value of the car when it was purchased, t is the number of years since it was purchased, and v is the current value of the car. We can use the fact that the value of the car 2 years after it was purchased was \$17,918 to find the value of the car when it was purchased by substituting into the function and solving for p. We get $17918 = p(0.85)^2$, so $17918 = 0.7225p$, so p, the value of the car when it was purchased, was \$24,800. **<u>Scoring</u>** A complete response consists of the following four components: • In Part A, the student states the situation can be modeled by an exponential function and provides a correct explanation. • In either Part A or Part B, the student identifies the correct decay factor of 0.85. This may not be explicit but should be apparent in the work shown. • In Part B, the student finds a reasonable computation (between \$23,000 and \$25,000) for the original price based on the work shown. • In Part B, the student provides an equation, process, or explanation for the computation.
3	The response includes three of the four components listed above.
2	The response includes two of the four components listed above.
1	The response includes one of the four components listed above.
0	The response includes none of the four components listed above.