| Beginning Algebra OER Instructors' Guide | | | | | |
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| **Class** | **MOM Section** | **Topic** | **Objectives** | **Teaching Notes**<br>Teach Workbook examples and give in-class practice problems to students using workbook exercises (instructor can always modify number of exercises if necessary, based on level of class) | **Suggested Homework** |
| 1. | 0.1 | **Integers** | Add, subtract, multiply and divide positive and negative numbers | **Teach**:<br>Workbook examples A, B<br>• In-class problems for students: Worksheet: 1-7<br>Workbook examples C-F<br>• In-class problems for students: Worksheet: 8-18 even<br>Workbook examples G, H<br>• In-class problems for students: Worksheet: 19-24 | Myopenmath<br>• Practice problems |
| 2. | 0.2 | **Fractions** | Reduce, add, subtract, multiply, and divide with fractions | **Teach:**<br>Workbook examples A- C<br>• In-class problems for students: Worksheet: 1-7 odd<br>Workbook examples D-G<br>• In-class problems for students: Worksheet: 9-17 odd<br>Workbook examples H-K<br>• In-class problems for students: Worksheet: 19-25 odd | Myopenmath<br>• Practice problems |
| 3. | 0.3 | **Order of Operations** | Evaluate expressions using the order of operations | **Teach:**<br>Workbook examples A-C<br>• In-class problems for students: Worksheet: 1-6<br>Workbook examples D-E<br>• In-class problems for students: Worksheet: 7-15 odd | Myopenmath<br>• Video problems<br>• Practice problems |
| 4. | 0.4 | **Properties of Algebra** | Simplify algebraic expressions by substituting given values, distributing, and combining like terms | **Teach:**<br>Workbook examples A -E<br>Worksheet #6<br>• In-class problems for students:<br>Worksheet: 1, 3, 5, 10 13 & 18<br>Workbook examples F<br>Worksheet # 28, 30 | Myopenmath<br>• Video problems<br>• Practice problems |

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| | | | | • In-class problems for students:<br>Worksheet: 19-31 odd | |
| 5. | 1.1 | **One-Step Equations** | Solve one step linear equations by balancing using inverse operations | **Teach:**<br>Workbook examples A- F<br>• In-class problems for students:<br>Worksheet: 1- 15 odd | Myopenmath<br>• Video problems<br>• Practice problems |
| 6. | 1.2 | **Two-Step Equations** | Solve two-step equations by balancing and using inverse operations | **Teach:**<br>Workbook examples A- C and worksheet #8 & 10<br>• In-class problems for students:<br>Worksheet: 1-9 odd<br>Workbook examples D<br>Worksheet #12, 14<br>• In-class problems for students:<br>Worksheet: 11, 13, 15 | Myopenmath<br>• Video problems<br>• Practice problems |
| 7. | 1.3 | **General Linear Equations** | Solve general linear equations with variables on both sides<br><br>Use the solution of an equation to classify the equation as either a conditional equation, an identity, or a contradiction | **Teach:**<br>Workbook examples A, B<br>• In-class problems for students: Worksheet: 1-7<br>Workbook examples C, D<br>• In-class problems for students: Worksheet: 8-10 | Myopenmath<br>• Video problems<br>• Practice problems |
| 8. | 1.4 | **Solving with Fractions** | Solve linear equations with rational coefficients by multiplying by the least common denominator to clear the fractions | **Teach:**<br>Workbook examples A, B, C<br>• In-class problems for students: Worksheet: 1, 2, 4, 7, 9-11<br>Workbook example D<br>• In-class problems for students: Worksheet: 3, 5, 6, 8 | Myopenmath<br>• Video problems<br>• Practice problems |

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| 9. | 1.5 | **Formulas** | Solve linear formulas for a specific variable | **Teach:**<br>Workbook examples A-D, F<br>• In-class problems for students: Worksheet: 1-9, 11<br>Workbook example E<br>• In-class problems for students: Worksheet: 10, 12 | Myopenmath<br>• Video problems<br>• Practice problems |
| 10. | 1.8 | **Application: Number/Geometry** | Solve number and geometry problems by creating and solving a linear equation | **Teach:**<br>Workbook examples A- C &<br>worksheet #8 & 10<br>• In-class problems for students:<br>Worksheet: 1- 11 odd<br>Workbook examples D-F<br>• In-class problems for students:<br>Worksheet: 1, 3, 5, and 9 | Myopenmath<br>• Video problems<br>• Practice problems |
| 11. | 1.9 | **Other Applications** | Set up a linear equation to solve age, commission, sales tax, and discount problems | **Teach:**<br>Workbook examples A<br>worksheet # 2<br>• In-class problems for students:<br>Worksheet: 1<br>Workbook examples B-C<br>worksheet # 4<br>• In-class problems for students:<br>Worksheet: 3, 5<br>Workbook examples D-E<br>worksheet # 10, 12<br>• In-class problems for students:<br>Worksheet: 7, 9, 11 | Myopenmath<br>• Video problems<br>• Practice problems |
| 12. | 3.1 | **Solve and Graph Inequalities** | Solve, graph, and give interval notation for the | **Teach:**<br>Workbook examples A-C<br>• In-class problems for students: | Myopenmath<br>• Video problems |

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| | | | solution to linear inequalities | Worksheet: 1,3,7,9<br>Workbook examples D, F<br>Worksheet # 16<br>• In-class problems for students:<br>Worksheet: 11, 13, 15, 17 | • Practice problems |
| 13. | 2.1 | **Points and Lines** | Graph points and linear equations by finding and plotting ordered pair solutions using xy coordinates. | Teach:<br>Workbook example A<br>• In-class problems for students:<br>Worksheet: 1, 4, 7, 10, 13, 18, 19, 21<br>Workbook example B, C<br>• In-class problems for students: Worksheet: 1-9 odd | Myopenmath<br>• Video problems<br>• Practice problems |
| 14. | 2.2 | **Slope** | Find the slope of a line given a graph or two points | Teach:<br>Workbook example A<br>• In-class problems for students:<br>Worksheet: 1, 2<br>Workbook example B<br>• In-class problems for students: Worksheet: 4, 5, 6<br>Workbook example C<br>• In-class problems for students: Worksheet: 10-14 | Myopenmath<br>• Video problems<br>• Practice problems |
| 15. | 2.3 | **Slope-Intercept Form** | Write the equation of a line using slope intercept form | **Teach:**<br>Workbook example A<br>• In-class problems for students: Worksheet: 1, 2<br>Workbook examples B, C<br>• In-class problems for students: Worksheet: 4, 5, 6, 7, 8<br>Workbook example D<br>• In-class problems for students: Worksheet: 11-14<br>• | Myopenmath<br>• Video problems<br>• Practice problems |
| 16. | 2.4 | **Point-Slope Form** | Give the equation of a line with a known slope and point | **Teach:**<br>Workbook example A<br>• In-class problems for students: Worksheet: 1-5 odd<br>Workbook examples B, C, D<br>• In-class problems for students: Worksheet: 6-10 even | Myopenmath<br>• Video problems<br>• Practice problems |

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| 17. | 2.5 | **Parallel & Perpendicular Lines** | Write an equation of a line given a parallel or perpendicular line | **Teach:**<br>Workbook example A, B<br>• In-class problems for students: Worksheet: 1-9 odd<br>Workbook examples C, D, E<br>• In-class problems for students: Worksheet: 13-21 odd | Myopenmath<br>• Video problems<br>• Practice problems |
| 18. | 4.1 | **Graphing** | Solve systems of equations by graphing and identifying the point of intersection | **Teach:**<br>Workbook example A, B<br>• In-class problems for students: Worksheet: 1-3<br>Workbook examples C-F<br>• In-class problems for students: Worksheet: 4, 6, 8 | Myopenmath<br>• Video problems<br>• Practice problems |
| 29. | 4.2 | **Substitution** | Solve systems of equations using substitution | **Teach:**<br>Workbook example A, B<br>• In-class problems for students: Worksheet: 1, 3, 4<br>Workbook examples C<br>• In-class problems for students: Worksheet: 5, 6 | Myopenmath<br>• Video problems<br>• Practice problems |
| 20. | 4.3 | **Addition/Elimination** | Solve systems of equations using the addition/elimination method | **Teach:**<br>Workbook example A<br>• In-class problems for students: Worksheet: 1, 2<br>Workbook examples B, C, D<br>• In-class problems for students: Worksheet: 3, 4, 5, 7 | Myopenmath<br>• Video problems<br>• Practice problems |
| 21. | 4.5 | **Application: Value Problems** | Solve value problems by setting up a system of equations | **Teach:**<br>Workbook examples A, B<br>• In-class problems for students: Worksheet: 1, 2, 3, 5 | Myopenmath<br>• Video problems |

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| | | | | | • Practice problems |
| 22. | 4.6 | **Application: Mixture Problems** | Solve mixture problems by setting up a system of equations | **Teach:**<br>Workbook examples A, B<br>• In-class problems for students: Worksheet: 1, 2, 3, 4 | Myopenmath<br>• Video problems<br>• Practice problems |
| 23. | 5.1 | **Exponent Properties** | Simplify expressions using the properties of exponents | **Teach**:<br>Workbook examples A-D<br>• In-class problems for students:<br>Worksheet: 1, 3, 5<br>Workbook examples E-G<br>• In-class problems for students:<br>Worksheet: 7,9,11<br>Workbook examples H-K<br>• In-class problems for students:<br>Worksheet: 13, 15, 17, 20<br>Workbook examples L,M,O,P<br>• In-class problems for students:<br>Worksheet: 21,23,24,25 | Myopenmath<br>• Video problems<br>• Practice problems |
| 24. | 5.2 | **Negative Exponents** | Simplify expressions with negative exponents using the properties of exponents | **Teach:**<br>Workbook examples A-F<br>• In-class problems for students: Worksheet: 1-7<br>Workbook examples G, H<br>• In-class problems for students: Worksheet: 8-15 | Myopenmath<br>• Video problems<br>• Practice problems |
| 25. | 5.3 | **Scientific Notation** | Multiply and divide expressions using | **Teach:**<br>Workbook example A, B, E, F | Myopenmath |

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| | | | scientific notation and exponent properties | • In-class problems for students: Worksheet: 1-11 odd<br>Workbook examples I, J<br>• In-class problems for students: Worksheet: 13, 15 | • Video problems<br>• Practice problems |
| 26. | 5.4 | **Introduction to Polynomials** | Evaluate, add, and subtract polynomials | **Teach:**<br>Workbook example A, B, C<br>• In-class problems for students: Worksheet: 1, 2<br>Workbook examples D, E<br>• In-class problems for students: Worksheet: 3, 4, 6, 7, 8 | Myopenmath<br>• Video problems<br>• Practice problems |
| 27. | 5.5 | **Multiply Polynomials** | Multiply polynomials | **Teach:**<br>Workbook example A<br>• In-class problems for students:<br>Worksheet: 1, 3<br>Workbook examples B, C<br>• In-class problems for students: Worksheet 5, 7, 8<br>Workbook examples E<br>• In-class problems for students: Worksheet: 9, 11, 13, 14, 16 | Myopenmath<br>• Video problems<br>• Practice problems |
| 28. | 5.6 | **Multiply Special Products** | Recognize and use special product rules of a sum and difference and perfect squares to multiply polynomials | **Teach:**<br>Workbook examples A, C<br>• In-class problems for students:<br>Worksheet: 1-7 odd<br>Workbook examples D, F, G<br>• In-class problems for students: Worksheet 9-17 odd | Myopenmath<br>• Video problems<br>• Practice problems |
| 29. | 5.7 | **Divide Polynomials** | Divide polynomials using long division | **Teach:**<br>Workbook examples A, C, E<br>• In-class problems for students:<br>Worksheet: 1, 4, 5 | Myopenmath<br>• Video problems |

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| | | | | Workbook examples F, G, H<br>• In-class problems for students:<br>Worksheet: 7, 9, 11, 13 | • Practice problems |