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| **Variables and Equations** | | | |
| Evaluates a numerical expression using the order of operations.    80 ÷ 5 × (2 + 3) − 23  = 80 ÷ 5 × 5 − 23  = 80 ÷ 5 × 5 − 8  = 16 × 5 − 8  = 80 − 8  = 72  “I have to do the operation  in parentheses first, then the power, then the multiplication and division  in the order they appear,  and then the subtraction.” | Models an algebraic expression and combines like terms.  3*q* + 2*r* + 4*r* + *q*  A group of black triangles with letters and numbers  Description automatically generated  “3*q* + 2*r* + 4*r* + *q* = 4*q* + 6*r*” | Uses algebraic properties to rearrange terms in an algebraic expression.    6(*b* + 3) + 7*b*  = 6 × *b* + 6 × 3 + 7*b*  = 6*b* + 18 + 7*b*  = 6*b* + 7*b* + 18  “I used the distributive property to eliminate the parentheses,  then I used the commutative property to rearrange the terms.” | Simplifies algebraic expressions by combining like terms.  6(*b* + 3) + 7*b*  = 6 × *b* + 6 × 3 + 7*b*  = 6*b* + 18 + 7*b*  = 6*b* + 7*b* + 18  = 13*b* + 18  “6*b* and 7*b* are like terms  so I can add them.” |
| **Observations/Documentation** | | | |
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| **Variables and Equations (cont’d)** | | | |
| Simplifies expressions on both sides of an equation.  2(3*d* + 4) − 1 = 100 ÷ 4  6*d* + 2 × 4 − 1 = 25  6*d* + 8 − 1 = 25  6*d* + 7 = 25  “I used algebraic properties  to simplify the expressions  on both sides of the equation.  Now I have an equation  with two operations.” | Solves equations involving one or two operations using different strategies.  6*d* + 7 = 25  6*d* + 7 = 18 + 7  So, 6*d* = 18  “I used a balance model.  Then, I know 6 × 3 = 18,  so *d* = 3.” | Verifies the solution to an equation.    2(3*d* + 4) − 1 = 100 ÷ 4  6*d* + 7 = 25  To check, substitute *d* = 3.  Left side = 2(3*d* + 4) − 1  = 2(3 × 3 + 4) − 1  = 2(13) − 1  = 26 − 1  = 25  Right side = 100 ÷ 4  = 25  “Since the left side equals the right side, my solution is correct.” | Flexibly works with equations to solve problems using a variety of strategies.  Ava rents a bicycle to ride around the city. There is a flat fee of $10, plus $3 per hour. Ava pays a total of $28. For how many hours did Ava rent the bicycle?  10 + 3*n* = 28, where *n* is the number of hours that Ava rented the bicycle.  10 – 10 + 3*n* = 28 – 10  3*n* = 18  *n* = 6  “I know 3 × 6 = 18, so *n* = 6. Ava rented the bicycle for 6 hours.” |
| **Observations/Documentation** | | | |
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