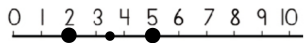Thinking ahead and analyzing problems
WHAT'S THE FIRST STEP?

Match each problem to the first step you would take to solve it:

Problem   First Step

1. Factor: $x^2 - 7x + 10$ $0 = (x - 5)(x - 2)$

                                                                     $y = x^2 - 7x + 10$

2. Find the x-intercepts of: $y = x^2 - 7x + 10$

                                                                     $x^2 - 7x = -10$
                                                                     $\underline{+10 \quad +10}$

3. What are the roots of: $y = (x - 5)(x - 2)$?

                                                                     $\dfrac{5 + 2}{2} = 3.5$

4. Solve for x: $x^2 - 7x = -10$ $0 = x^2 - 7x + 10$

5. (5, 0) and (2, 0) are the x-intercepts of the
    parabola $y = x^2 - 7x + 10$.
    What is the vertex?

                                                                     | 3 | $3x^2$ | $-9x$ | -12 |

6. Factor completely: $3x^2 - 9x - 12$

                                                                     $x = \dfrac{9 \pm \sqrt{(-9)^2 - 4(3)(-12)}}{2(3)}$