
```

1  // A validator to check and verify something has a factored form...
2  function factorCheck(f,g) {
3      // This validator is designed to check that a student is submitting a factored polynomial
4      // Checking that there are the correct number of non-numeric and non-inverse factors as
5      // Checking that the submitted answer and the expected answer are the same via real Xronos
6      // Checking that the outer most (last to be computed when following order of operations)
7
8      var operCheck = f.tree[0]; // Check to see if the root operation is multiplication at end
9      var studentFactors = f.tree.length; // Temporary number of student-provided factors (+1 for root)
10
11      // Now we adjust the length to remove any numeric factors, or division factors, etc to a
12      for (var i = 0; i < f.tree.length; i++) {
13          if ((typeof f.tree[i] === 'number') || (f.tree[i][0] == '-') || (f.tree[i][0] == '/')) {
14              studentFactors = studentFactors - 1;
15          }
16      }
17
18      // Now we do the same with the provided answer, in case sage or something provides a weird
19      var answerFactors = g.tree.length;
20
21      // Adjust length in the same way, so that it will match the students if it should.
22      for (var i = 0; i < g.tree.length; i++) {
23          if (typeof g.tree[i] === 'number') {
24              answerFactors = answerFactors - 1;
25          }
26      }
27
28      // Note: An especially dedicated student could pad with weird factors that are happen to
29      // For example, a student could enter sin^2(x)+cos^2(x) as a multiplicative factor to pad
30      // This would be somewhat difficult to think of, even on purpose.
31      // Until I can reliably evaluate the factors themselves as functions though, there isn't
32
33      return ((f.equals(g)) && (studentFactors == answerFactors) && (operCheck == '*'))
34  }

```

Note: This is using an experimental factoring validator. If you verified that your answer should be correct and Xronos won't take it, please email your instructor to see if there is a problem

Problem 1 Factor the following quadratic by factoring its coefficients.

$$p(x) = x^2 - x - 12 = \boxed{(x + 3)(x - 4)}$$

Factor Coefficients Method Practice 1

Feedback(attempt): Remember you want to find two numbers that multiply to -12 and add to -1 .

Problem 2 Factor the following quadratic by factoring it's coefficients.

$$p(x) = x^2 - 5x + 4 = \boxed{(x - 1)(x - 4)}$$

Feedback(attempt): Remember you want to find two numbers that multiply to 4 and add to -5 .

Problem 3 Factor the following quadratic by factoring it's coefficients.

$$p(x) = x^2 + 2x - 48 = \boxed{(x + 8)(x - 6)}$$

Feedback(attempt): Remember you want to find two numbers that multiply to -48 and add to 2 .

Problem 4 Factor the following quadratic by factoring it's coefficients.

$$p(x) = x^2 - 9x + 18 = \boxed{(x - 3)(x - 6)}$$

Feedback(attempt): Remember you want to find two numbers that multiply to 18 and add to -9 .
