Class Practice on Polynomial Multiplication

1. Multiply the polynomials: $5x$ and $2x$

2. Multiply the polynomials: $5x^3$ and $2x^{11}$

3. Multiply the polynomials: $5x$ and $2x + 3$

4. Multiply the polynomials: $5x + 2$ and $2x + 3$

5. Multiply the polynomials: $5x - 3$ and $-2x + 4$

6. Multiply and simplify: $(5x + 3)(x - 7)$
7. Multiply and simplify: $(2x - 5)(x - 2)$

8. Multiply and simplify: $(2x - 5)(2x^2 + 3x - 4)$

9. Multiply and simplify: $(2x + 5)^2$

10. Multiply and simplify: $(4x - 1)^2$
1. Multiply the polynomials: 5x and 2x
   
   We write \((5x)(2x) = 10x^2\) ← Answer

2. Multiply the polynomials: 5x^3 and 2x^11
   
   We write \((5x^3)(2x^{11}) = 10x^{14}\) ← Answer

3. Multiply the polynomials: 5x and 2x + 3
   
   We write \(5x(2x + 3) = 10x^2 + 15x\) ← Answer

4. Multiply the polynomials: 5x + 2 and 2x + 3
   
   \((5x + 2)(2x + 3) = \)
   
   \(10x^2 + 15x + 4x + 6 = \)
   
   \(10x^2 + 19x + 6 ← \) Answer

5. Multiply the polynomials: 5x − 3 and −2x + 4
   
   \((5x − 3)(−2x + 4) = \)
   
   \(−10x^2 + 20x + 6x − 12 = \)
   
   \(−10x^2 + 26x − 12 ← \) Answer

6. Multiply and simplify: \((5x + 3)(x − 7)\)
   
   \((5x + 3)(x − 7) = \)
   
   \(5x^2 − 35x + 3x − 21 = \)
   
   \(5x^2 − 32x − 21 ← \) Answer
7. Multiply and simplify: \((2x - 5)(x - 2)\)

\[
(2x - 5)(x - 2) = \\
2x^2 - 4x - 5x + 10 = \\
2x^2 - 9x + 10 \leftarrow \text{Answer}
\]

8. Multiply and simplify: \((2x - 5)(2x^2 + 3x - 4)\)

\[
(2x - 5)(2x^2 + 3x - 4) = \\
4x^3 + 6x^2 - 8x - 10x^2 - 15x + 20 = \\
4x^3 - 4x^2 - 23x + 20 \leftarrow \text{Answer}
\]

9. Multiply and simplify: \((2x + 5)^2\)

\[
(2x + 5)^2 = (2x + 5)(2x + 5) = \\
4x^2 + 10x + 10x + 25 = \\
4x^2 + 20x + 25 \leftarrow \text{Answer}
\]

10. Multiply and simplify: \((4x - 1)^2\)

\[
(4x - 1)^2 = (4x - 1)(4x - 1) = \\
16x^2 - 4x - 4x + 1 = \\
16x^2 - 8x + 1 \leftarrow \text{Answer}
\]