

8-3A: Multiplying Binomials

From Monday p 377.

- 5) $18x^2 + 2x^3$
- 6) $-p^3 + 11p^2$
- 7) $12x^4 - 2x^3 + 10x^2$
- 8) $36y^5 + 32y^4 - 44y^2$
- 9) $-45c^5 + 40c^4 + 25c^3$
- 10) $-42q^7 + 14q^3 + 49q^2$
- 11) $-3g^{11} + 18g^9 - 15g^7$
- 12) $-40x^9 - 12x^8 + 28x^6$

- 17) $5(5b^3 + 3b - 6)$
- 18) $x(x^2 + 7x - 5)$
- 19) $2(3x - 2)$
- 20) $v(v + 4)$
- 21) $5(2x^3 - 5x^2 + 4)$
- 22) $2t^2(1 - 5t^2)$
- 23) $3n(5n^2 - n + 4)$
- 24) $6p^3(p^3 + 4p^2 + 3)$

From Tuesday p. 378

- 31) $x^2 + x$
- 32) $12t^3 - 23t^2$
- 34) $9m^5(m^7 - 4m^2 + 9)$
- 38) $13ab^3(1 + 3ab)$
- 39) $7g^2k^2(k - 5g^3)$

Due tomorrow p.383 #1-4 all, #11-19 odds

Simplify each product.

1. $8m(m + 6)$

2. $(x + 10)3x$

3. $9k(7k + 4)$

4. $-5a(a - 1)$

5. $2x^2(9 + x)$

6. $-p^2(p - 11)$

7. $2x(6x^3 - x^2 + 5x)$

8. $4y^2(9y^3 + 8y^2 - 11)$

9. $-5c^3(9c^2 - 8c - 5)$

10. $-7q^2(6q^5 - 2q - 7)$

11. $-3g^7(g^4 - 6g^2 + 5)$

12. $-4x^6(10x^3 + 3x^2 - 7)$

Find the common factor of the terms of each polynomial.

13. $15w + 21$

14. $6a^2 - 8a$

15. $36v + 24$

16. $x^3 + 7x^2 - 5x$

17. $5b^3 + 15b - 30$

18. $9x^3 - 6x^2 + 12x$

Factor each polynomial.

19. $6x - 4$

20. $v^2 + 4v$

21. $10x^3 - 25x^2 + 20$

22. $2t^2 - 10t^4$

23. $15n^3 - 3n^2 + 12n$

24. $6p^6 + 24p^5 + 18p^3$

1) Find the product (Multiply).

$$5x^3(3x^2 + 2x - 1)$$

2) Factor the binomial (find the GCF first!)

$$6x^2 + 9x$$

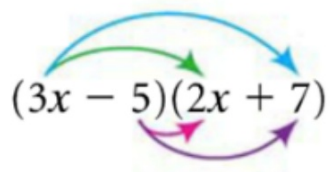
8-3A: Multiplying Binomials

You can use an area model to multiply two binomials. The diagram below shows $(2x + 3)(x + 4)$.

	x	$+ 4$
$2x$	$2x^2$	$8x$
$+ 3$	$3x$	12

Simplify $(3x - 5)(2x + 7)$.

	$2x$	$+ 7$
$3x$		
$- 5$		



	F	O	I	L
	First	Outer	Inner	Last
$=$	$(3x)(2x)$	$+ (3x)(7)$	$- (5)(2x)$	$- (5)(7)$
$=$	$6x^2$	$+ 21x$	$- 10x$	$- 35$
$=$	$6x^2$	$+ 11x$		$- 35$

$$(3x + 4)(2x + 5)$$

$$(3x)(2x) + (3x)(5) + (4)(2x) + (4)(5)$$

$$6x^2 + 15x + 8x + 20$$

$$6x^2 + 23x + 20$$

3x
+
4

2x + 5

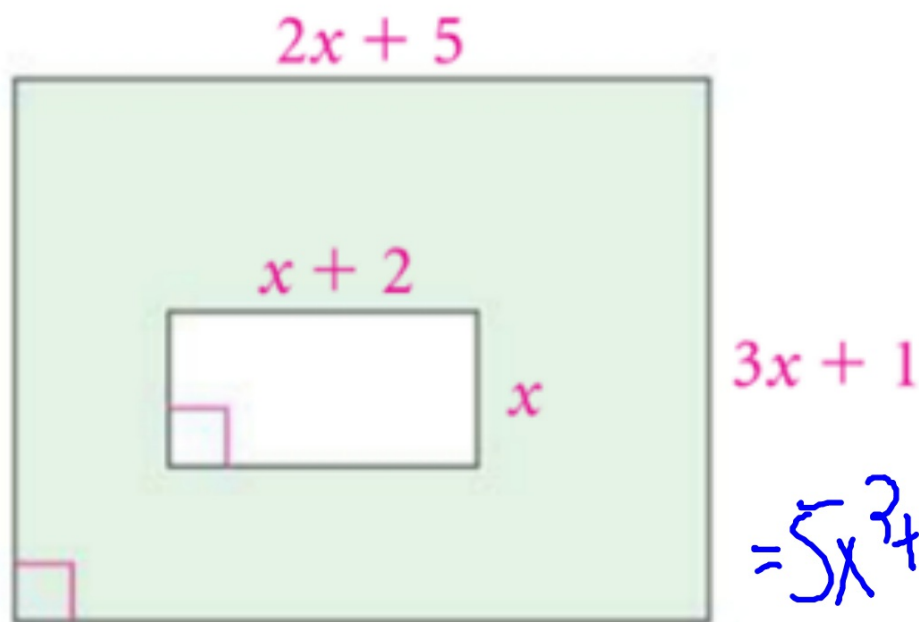
$$(3x + 4)(2x - 5)$$

$$(3x)(2x) + (3x)(-5) + (4)(2x) + (4)(-5)$$

$$6x^2 - 15x + 8x - 20$$

$$6x^2 - 7x - 20$$

$$(3x - 4)(2x - 5)$$



$$= 5x^2 + 15x + 5$$

$$\begin{aligned}
 & (2x+5)(3x+1) - (x+2)(x) \\
 & 6x^2 + 2x + 15x + 5 - (x^2 + 2x) \\
 & 6x^2 + 17x + 5 - x^2 - 2x
 \end{aligned}$$

Copy and fill in each blank.

1. $(5a + 2)(6a - 1) = \blacksquare a^2 + 7a - 2$ 2. $(3c - 7)(2c - 5) = 6c^2 - 29c + \blacksquare$
3. $(z - 4)(2z + 1) = 2z^2 - \blacksquare z - 4$ 4. $(2x + 9)(x + 2) = 2x^2 + \blacksquare x + 18$

Simplify each product using FOIL.

11. $(r + 6)(r - 4)$ 12. $(y + 4)(5y - 8)$ 13. $(x + 6)(x - 7)$
14. $(m - 6)(m - 9)$ 15. $(4b - 2)(b + 3)$ 16. $(8w + 2)(w + 5)$
17. $(x - 7)(x + 9)$ 18. $(a + 11)(a + 5)$ 19. $(p - 1)(p + 10)$