Harder Expanding Practice #1

Expand and simplify:

1. $(x - 5)(x - 3)$

2. $2x(x + 2) + 3x(x + 7)$

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

4. $(k + 6)(6 - k)$

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

6. $(x - 2)(x + 2)$

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

8. $(4x + 5)(3x + 2)$

9. $(ab + 5)(a - b)$

10. $(x - y)(x + y)$

11. $-2(x + 2) - 3(7 - x)$

12. $(2a - b)(a - 2b)$

13. $x(2x - 5) - 2(x - 3)$

14. $(x + 5)(x - 7)$

15. $2(k + h) - 4(h - k)$

16. $2(2x + 3) - (4x + 1)$

17. $(5x - 6)^2$

18. $(2x - 5)(3x + 2)$

19. $(a + 5b)(b - 2a)$

20. $2(x + -2) - 5(7 + x)$

Answers: Harder Expanding Practice #1

Negative terms can also be written as plus the negative, e.g. $3x - 5 = 3x + {}^{-}5$.
Terms can be in any order, so long as the + and – signs are correct, e.g. ${}^{-}k^2 + 6 = 6 - k^2$

Expand and simplify:

1.	$(x - 5)(x - 3)$	$= x^2 - 3x - 5x + 15$	$= x^2 - 8x + 15$
2.	$2x(x + 2) + 3x(x + 7)$	$= 2x^2 + 4x + 3x^2 + 21x$	$= 5x^2 + 25x$
3.	$5(2x + 3) - 2(x - 2)$	$= 10x + 15 - 2x + 4$	$= 8x + 19$
4.	$(k + 6)(6 - k)$	$= 6k - k^2 + 36 - 6k$	$= 36 - k^2$
5.	$2(5 + x) - 4(4 + x)$	$= 10 + 2x - 16 - 4x$	$= {}^{-}2x - 6$
6.	$(x - 2)(x + 2)$	$= x^2 + 2x - 2x - 4$	$= x^2 - 4$
7.	${}^{-}5(2x - 5) - 3(x - 3)$	$= {}^{-}10x + 25 - 3x + 9$	$= {}^{-}13x + 34$
8.	$(4x + 5)(3x + 2)$	$= 12x^2 + 8x - 15x + 10$	$= 12x^2 - 7x + 10$
9.	$(ab + 5)(a - b)$	$= a^2b - ab^2 + 5a - 5b$	
10.	$(x - y)(x + y)$	$= x^2 + xy - yx - y^2$	$= x^2 - y^2$
11.	${}^{-}2(x + 2) - 3(7 - x)$	$= {}^{-}2x - 4 - 21 + 3x$	$= x - 25$
12.	$(2a - b)(a - 2b)$	$= 2a^2 - 4ab - ab + 2b^2$	$= 2a^2 - 5ab + 2b^2$
13.	$x(2x - 5) - 2(x - 3)$	$= 2x^2 - 5x - 2x + 6$	$= 2x^2 - 7x + 6$
14.	$(x + 5)(x - 7)$	$= x^2 - 7x + 5x - 35$	$= x^2 - 2x - 35$
15.	$2(k + h) - 4(h - k)$	$= 2k + 2h - 4h + 4k$	$= 6k - 2h$
16.	$2(2x + 3) - (4x + 1)$	$= 4x + 6 - 4x - 1$	$= 5$
17.	$(5x - 6)^2 = (5x - 6)(5x - 6)$	$= 25x^2 - 30x - 30x + 36$	$= 25x^2 - 60x + 36$
18.	$(2x - 5)(3x + 2)$	$= 6x^2 + 4x - 15x - 10$	$= 6x^2 - 11x - 10$
19.	$(a + 5b)(b - 2a)$	$= ab - 2a^2 + 5b^2 - 10ab$	$= 5b^2 - 2a^2 - 9ab$
20.	$2(x + {}^{-}2) - 5(7 + x)$	$= 2x - 4 - 35 - 5x$	$= {}^{-}3x - 39$