Another Factoring Worksheet

Friday, February 24, 2017 11:22 AM

Name: _____ Date: _____ Block: _____

Worksheet Factoring Trinomials

Factor the following completely. Look for a GCF first.

1. $x^2+13x-30$

2. $x^2-5x-24$

3. $x^2+5x-36$

4. $x^2+15x+56$

5. $x^2+15x+54$

6. $x^2-8x-20$

7. $x^2+4x-32$

8. x^2-x-20

9. $x^2+11x+30$

10. $x^2+14x+49$

11. $x^2+10x+16$

12. x^2+3x+2

13. $x^2+15x+44$

15. x^2+6x+5

16. $2x^2+20x+32$

18. $3x^2-15x+18$

19. $2x^2+8x-24$

20. $2x^2+16x-32$

Name: _____ Date: _____ Block: _____

21. $3x^2+7x+2$

22. $2x^2+5x+3$

23. $3x^2-16x+5$

24. $7x^2-9x+2$

25. $6x^2+5x+1$

26. $8x^2-9x+1$

27. $10x^2+17x+3$

28. $9x^2-9x+2$

29. $5x^2+11x+6$

30. $3x^2+2x-1$

31. $5x^2-4x-1$

32. $2x^2+5x-3$

33. $7x^2-13x-2$

34. $3x^2+14x-5$

35. $4x^2-11x+7$

P = product
S = sum

Name: Solutions (greatest common factor) Date: _____ Block: _____

Worksheet Factoring Trinomials

Factor the following completely. Look for a GCF first.

1. $x^2+13x-30$

AC=-30, P=-30, S=13, (15,-2)

$= x^2+15x-2x-30$

$= x(x+15)-2(x+15)$

$= (x+15)(x-2)$

2. $x^2-5x-24$

AC=-24, P=-24, S=-5, (-8,3)

$= x^2-8x+3x-24$

$= x(x-8)+3(x-8)$

$= (x-8)(x+3)$

3. $x^2+5x-36$

AC=-36, P=-36, S=5, (9,-4)

$= x^2+9x-4x-36$

$= x(x+9)-4(x+9)$

$= (x+9)(x-4)$

4. $x^2+15x+56$

AC=56, P=56, S=15, (8,7)

$= x^2+8x+7x+56$

$= x(x+8)+7(x+8)$

$= (x+8)(x+7)$

5. $x^2+15x+54$

AC=54, P=54, S=15, (9,6)

$= x^2+9x+6x+54$

$= x(x+9)+6(x+9)$

$= (x+9)(x+6)$

6. $x^2-8x-20$

AC=-20, P=-20, S=-8, (-10,2)

$= x^2-10x+2x-20$

$= x(x-10)+2(x-10)$

$= (x-10)(x+2)$

7. $x^2+4x-32$

AC=-32, P=-32, S=4, (8,-4)

$= x^2+8x-4x-32$

$= x(x+8)-4(x+8)$

$= (x+8)(x-4)$

8. x^2-x-20

AC=-20, P=-20, S=-1, (-5,4)

$= x^2-5x+4x-20$

$= x(x-5)+4(x-5)$

$= (x-5)(x+4)$

9. $x^2+11x+30$

AC=30, P=30, S=11, (5,6)

$= x^2+5x+6x+30$

$= x(x+5)+6(x+5)$

$= (x+5)(x+6)$

10. $x^2+14x+49$

AC=49, P=49, S=14, (7,7)

$= x^2+7x+7x+49$

$= x(x+7)+7(x+7)$

$= (x+7)(x+7)$

$= (x+7)^2$

11. $x^2+10x+16$

AC=16, P=16, S=10, (2,8)

$= x^2+2x+8x+16$

$= x(x+2)+8(x+2)$

$= (x+2)(x+8)$

12. x^2+3x+2

AC=2, P=2, S=3, (2,1)

$= x^2+2x+1x+2$

$= x(x+2)+1(x+2)$

$= (x+2)(x+1)$

13. $x^2+15x+44$

AC=44, P=44, S=15, (11,4)

$= x^2+11x+4x+44$

$= x(x+11)+4(x+11)$

$= (x+11)(x+4)$

15. x^2+6x+5

AC=5, P=5, S=6, (5,1)

$= x^2+5x+1x+5$

$= x(x+5)+1(x+5)$

$= (x+5)(x+1)$

16. $2x^2+20x+32$

all are divisible by 2, factor 2 out first. We call this the GCF.

$= 2(x^2+10x+16)$ ← which we already factored in #11

$= 2(x+2)(x+8)$

18. $3x^2-15x+18$

$= 3(x^2-5x+6)$

$= 3(x^2-2x-3x+6)$

$= 3[x(x-2)-3(x-2)]$

$= 3(x-2)(x-3)$

AC=6, P=6, S=-5, (-2,-3)

19. $2x^2+8x-24$

$= 2(x^2+4x-12)$

AC=-12, P=-12, S=4, (6,-2)

$= 2(x^2+6x-2x-12)$

$= 2[x(x+6)-2(x+6)]$

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

20. $2x^2+16x-32$

$= 2(x^2+8x-16)$

this trinomial cannot be factored, it is prime.

AC=-16, P=-16, S=8

1, 16
2, 8
4, 4
} none work!

$4+4=8$, but $4\times4 \neq -16$

Name: _____ Date: _____ Block: _____

21. $3x^2+7x+2$

$AC=6$ $P=6$ $S=7$ (6, 1)

$=3x^2+6x+1x+2$

$=3x(x+2)+1(x+2)$

$=(x+2)(3x+1)$

22. $2x^2+5x+3$

$AC=6$ $P=6$ $S=5$ (2, 3)

$=2x^2+2x+3x+3$

$=2x(x+1)+3(x+1)$

$=(x+1)(2x+3)$

23. $3x^2-16x+5$

$AC=15$ $P=15$ $S=-16$ (-15, -1)

$=3x^2-15x-1x+5$

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

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

24. $7x^2-9x+2$

$AC=14$ $P=14$ $S=-9$ (-7, -2)

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

$=7x(x-1)-2(x-1)$

$=(x-1)(7x-2)$

25. $6x^2+5x+1$

$AC=6$ $P=6$ $S=5$ (2, 3)

$=6x^2+2x+3x+1$

$=2x(3x+1)+1(3x+1)$

$=(3x+1)(2x+1)$

26. $8x^2-9x+1$

$AC=8$ $P=8$ $S=-9$ (-8, -1)

$=8x^2-8x-1x+1$

$=8x(x-1)-1(x-1)$

$=(x-1)(8x-1)$

27. $10x^2+17x+3$

$AC=30$ $P=30$ $S=17$ (15, 2)

$10x^2+15x+2x+3$

$=5x(2x+3)+1(2x+3)$

$=(2x+3)(5x+1)$

28. $9x^2-9x+2$

$AC=18$ $P=18$ $S=-9$ (-6, -3)

$=9x^2-6x-3x+2$

$=3x(3x-2)-1(3x-2)$

$=(3x-2)(3x-1)$

29. $5x^2+11x+6$

$AC=30$ $P=30$ $S=11$ (5, 6)

$=5x^2+5x+6x+6$

$=5x(x+1)+6(x+1)$

$=(x+1)(5x+6)$

30. $3x^2+2x-1$

$AC=-3$ $P=-3$ $S=2$ (3, -1)

$=3x^2+3x-1x-1$

$=3x(x+1)-1(x+1)$

$=(x+1)(3x-1)$

31. $5x^2-4x-1$

$AC=-5$ $P=-5$ $S=-4$ (-5, 1)

$=5x^2-5x+1x-1$

$=5x(x-1)+1(x-1)$

$=(x-1)(5x+1)$

32. $2x^2+5x-3$

$AC=-6$ $P=-6$ $S=5$ (6, -1)

$=2x^2+6x-1x-3$

$=2x(x+3)-1(x+3)$

$=(x+3)(2x-1)$

33. $7x^2-13x-2$

$AC=-14$ $P=-14$ $S=-13$ (-14, 1)

$=7x^2-14x+1x-2$

$=7x(x-2)+1(x-2)$

$=(x-2)(7x+1)$

34. $3x^2+14x-5$

$AC=-15$ $P=-15$ $S=14$ (15, -1)

$=3x^2+15x-1x-5$

$=3x(x+5)-1(x+5)$

$=(x+5)(3x-1)$

35. $4x^2-11x+7$

$AC=28$ $P=28$ $S=-11$ (-4, -7)

$=4x^2-4x-7x+7$

$=4x(x-1)-7(x-1)$

$=(x-1)(4x-7)$