

Chapter 9 Kuta Factoring Review (circle answer) A

Factor each completely. (Step 1 is always factor out GCF)

1) $-15k^2 + 50k$

$-5k(3k-10)$

2) $4x^4 + 40x^3 + 100x^2$

$4x^2(x^2 + 10x + 25)$
 $4x^2(x+5)(x+5)$

3) $32x^2 - 2$

$2(16x^2 - 1)$
 $2(4x+1)(4x-1)$

4) $45x^2 + 20$

$5(9x^2 + 4)$
 $5(3x+2)(3x+2)$

5) $32m^2 - 16m + 2$

$2(16m^2 - 8m + 1)$
 $2(4m-1)(4m-1)$
 or $2(4m-1)^2$

6) $100 - 64m^2$

$4(25 - 16m^2)$
 $4(5-4m)(5+4m)$

7) $-3k^2 + 6k + 9$

$-3(k^2 - 2k - 3)$
 $-3(k-3)(k+1)$

8) $12x^2 + 126x + 162$

$6(2x^2 + 21x + 27)$
 $6(2x+3)(x+9)$

1 27
3 9

9) $35n^2 - 215n + 30$

$5(7n^2 - 43n + 6)$
 $5(7n-1)(n-6)$

10) $-28r^2 + 244r + 360$

$-4(7r^2 - 61r - 90)$
 $-4(7r+9)(r-10)$

1 90
2 45
3 60
9 10

11) $-15x^4 - 84x^3 - 45x^2$

$-3x^2(5x^2 + 28x + 15)$
 $-3x^2(5x+3)(x+5)$

12) $4m^2 + 14m + 98$

$2(2m^2 + 7m + 49)$

Factor completely by grouping

13) $(x^3 - 3x^2)(5x + 15)$

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

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

15) $(5n^3 - n^2)(5n + 1)$

$n^2(5n-1) - 1(5n-1)$

$(5n-1)(n^2-1)$

$(5n-1)(n-1)(n+1)$

14) $(16a^3 + 2a^2)(56a - 7)$

$2a^2(8a+1) - 7(8a+1)$

$(8a+1)(2a^2-7)$

16) $(4n^3 - 5n^2)(16n + 20)$

$n^2(4n-5) - 4(4n-5)$

$(4n-5)(n^2-4)$

$(4n-5)(n+2)(n-2)$

Solve each equation by factoring.

17) $x^2 - 10x + 24 = 0$

$(x-4)(x-6) = 0$

$x=4$

$x=6$

18) $x^2 + 16x + 64 = 0$

$(x+8)(x+8) = 0$

$x=-8$

$C: 0=0 \checkmark$

19) $5b^2 = -20b + 60$ ($-5b^2 - 20b + 60 = 0$)

$5b^2 + 20b - 60 = 0$

$5(b^2 + 4b - 12) = 0$

$5(b+6)(b-2) = 0$

$b=-6$

$b=2$

$C: 180=180 \checkmark$ $C: 20=20 \checkmark$

21) $4x^2 - 24x + 36 = 0$

$4(x^2 - 6x + 9) = 0$

$4(x-3)(x-3) = 0$

$x=3$

$C: 0=0 \checkmark$

23) $5x^3 = -50x^2 - 105x$

$5x^3 + 50x^2 + 105x = 0$

$5x(x^2 + 10x + 21) = 0$

$5x(x+3)(x+7) = 0$

$x=0$

$x=-3$

$x=-7$

$C: 0=0 \checkmark$ $C: -135 = -135 \checkmark$

$C: -1,715 = -1,715 \checkmark$

20) $2n^2 = 72$

$2n^2 - 72 = 0$

$2(n^2 - 36) = 0$

$2(n-6)(n+6) = 0$

$n=6$

$n=-6$

$C: 72=72 \checkmark$

$C: 72=72 \checkmark$

22) $8x^2 - 40x = 0$

$8x(x-5) = 0$

$8x=0$

$x-5=0$

$x=0$

$x=5$

$C: 0=0 \checkmark$

$C: 0=0 \checkmark$