

### Calculus Missing Coefficients Practice #3

Calculate the missing coefficient(s):

1.  $2x^3 + 15x^2 + 152x + k$  if  $(2x - 1)$  is a factor
2.  $2x^3 - 7x^2 + 36x + k$  if  $(x^2 - 4x + 20)$  is a factor
3.  $45x^3 + kx^2 + 397x + 195$  if  $(5x + 3)$  is a factor
4.  $4x^3 + ax^2 + bx - 125$  if  $(x^2 + 25)$  is a factor
5.  $kx^3 + 36x^2 + 41x + 20$  if  $(5x + 4)$  is a factor
6.  $ax^3 + 2x^2 + 35x + b$  if  $(2x^2 + 2x + 13)$  is a factor
7.  $8x^3 - 14x^2 + 38x + k$  if  $(4x + 5)$  is a factor
8.  $5x^3 + ax^2 + bx - 10$  if  $(x^2 - 2x + 10)$  is a factor
9.  $kx^3 - 9x^2 + 33x + 105$  if  $(5x + 7)$  is a factor
10.  $3x^3 + kx^2 + 35x + 13$  if  $(x^2 - 4x + 13)$  is a factor

Calculate the other factors:

11.  $6x^3 + 73x^2 + 287x + k$  if  $(2x + 9)$  is one factor
12.  $2x^3 + 35x^2 + kx + 180$  if  $(x + 12)$  is one factor
13.  $2x^3 + kx^2 + 4x - 5$  if  $(x + 5)$  is one factor
14.  $kx^3 + 65x^2 - 19x - 12$  if  $(7x + 12)$  is one factor
15.  $24x^3 - 89x^2 - 304x + k$  if  $(8x + 13)$  is one factor
16.  $20x^3 + 88x^2 + kx + 35$  if  $(5x + 7)$  is one factor
17.  $2x^3 + kx^2 + 40x + 16$  if  $(x + 4)$  is one factor
18.  $kx^3 + 27x^2 - 10x - 3$  if  $(5x + 1)$  is one factor
19.  $24x^3 + 4x^2 - 110x + k$  if  $(6x - 5)$  is one factor
20.  $10x^3 + 11x^2 - 58x + k$  if  $(5x + 8)$  is one factor

### Answers: Calculus Missing Coefficients Practice #3

Calculate the missing coefficient(s):

1.  $2x^3 + 15x^2 + 152x - 80$   $(2x - 1)(x^2 + 8x + 80)$
2.  $2x^3 - 7x^2 + 36x + 20$   $(2x + 1)(x^2 - 4x + 20)$
3.  $45x^3 + 147x^2 + 397x + 195$   $(5x + 3)(9x^2 + 24x + 65)$
4.  $4x^3 - 5x^2 + 100x - 125$   $(4x - 5)(x^2 + 25)$
5.  $20x^3 + 36x^2 + 41x + 20$   $(5x + 4)(4x^2 + 4x + 5)$
6.  $6x^3 + 2x^2 + 35x - 26$   $(3x - 2)(2x^2 + 2x + 13)$
7.  $8x^3 - 14x^2 + 38x + 85$   $(4x + 5)(2x^2 - 6x + 17)$
8.  $5x^3 - 11x^2 + 52x - 10$   $(5x - 1)(x^2 - 2x + 10)$
9.  $15x^3 - 9x^2 + 33x + 105$   $(5x + 7)(3x^2 - 6x + 15)$
10.  $3x^3 - 11x^2 + 35x + 13$   $(3x + 1)(x^2 - 4x + 13)$

Calculate the other factors:

11.  $6x^3 + 73x^2 + 287x + 360$   $(2x + 9)(x + 5)(3x + 8)$
12.  $2x^3 + 35x^2 + 147x + 180$   $(x + 12)(x + 3)(2x + 5)$
13.  $2x^3 + 11x^2 + 4x - 5$   $(x + 5)(2x - 1)(x + 1)$
14.  $42x^3 + 65x^2 - 19x - 12$   $(7x + 12)(2x - 1)(3x + 1)$
15.  $24x^3 - 89x^2 - 304x - 156$   $(8x + 13)(x - 6)(3x + 2)$
16.  $20x^3 + 88x^2 + 109x + 35$   $(5x + 7)(2x + 1)(2x + 5)$
17.  $2x^3 + 17x^2 + 40x + 16$   $(x + 4)(x + 4)(2x + 1)$
18.  $10x^3 + 27x^2 - 10x - 3$   $(5x + 1)(2x - 1)(x + 3)$
19.  $24x^3 + 4x^2 - 110x + 75$   $(6x - 5)(2x - 3)(2x + 5)$
20.  $10x^3 + 11x^2 - 58x - 80$   $(5x + 8)(2x - 5)(x + 2)$