

Factoring Strategies

- 1.) If the number ends in an even digit, factor out a 2.
Ex. 362 ends in 2 (even)
 $362 = 2 \times 181$
- 2.) If the number ends in 5, factor out a 5.
Ex. 225 ends in 5
 $225 = 5 \times 45$
- 3.) If the digits in the number add up to a multiple of 3, factor out a 3.
Ex. 123 ; $1+2+3 = 6$ (a multiple of 3, so factor out a 3).
 $123 = 3 \times 41$
- 4.) If the number ends in a zero, factor out a 10.
Ex. 360 (ends in zero, factor out a 10)
 $360 = 10 \times 36$
- 5.) If the digits in the number add up to a multiple of 9, factor out a 9.
Ex. 81 ; $8+1 = 9$ (a multiple of 9 , so factor out a 9)
 $81 = 9 \times 9$
- 6.) If the last two digits are a multiple of 4, factor out a 4.
Ex. 84 = 4 x 21
- 7.) If the last 3 digits are a multiple of 8, factor out an 8.
Ex. 976 = 8 x 122
- 8.) If the number matches the rules for both 2 and 3, factor out a 6.
Ex. 468 ; 8 is even ; $4+6+8 = 18$ (a multiple of 3), factor out a 6.
 $468 = 6 \times 78$
- 9.) If the number matches the rules for 3 and 4, factor out a 12
Ex. 936 ; $9+3+6 = 18$ (a multiple of 3); 36 is a multiple of 4; factor out a 12.
 $936 = 12 \times 78$
- 10.) 11's. Add every other digit, then sum the remaining digits . Compare sums. If the sums are the same or have a difference that is a multiple of 11, factor out an 11.
Ex. 26829 ; $2+8+9 = 19$; $6+2 = 8$; 19 and 8 differ by 11 (factor out an 11).
 $26829 = 11 \times 2439$