

Factoring Review

Factor each completely.

1) $a^2 + 9a$ 2 zeros
 $a(a+9)$ $a=0, -9$

3) $3p^3 - 27p^2 - 30p$ 3 zeros
 $3p(p^2 - 9p - 10)$ $p=0, 10, -1$
 $= 3p(p-10)(p+1)$

5) $x^2 + 6x - 16$ Zeros 2
 $(x+8)(x-2)$ $x=-8, 2$

7) $4n^2 - 18n$ Zeros 2
 $2n(2n-9)$ $n=0, 9$

9) $7m^2 + 25m - 12$ Zero 2
 $(7m-3)(m+4)$ $m=\frac{3}{7}, -4$

11) $10x^2 + 15x - 10$ Zeros 2
 $5(2x^2 + 3x - 2)$ $x=+\frac{1}{2}, -2$
 $5(2x-1)(x+2)$

13) $10k^2 - 6k - 4$ Zeros 2
 $2(5k^2 - 3k - 2)$ $k=-\frac{2}{5}, 1$
 $(5k+2)(k-1)$

15) $35n^2 - 55n - 150$ Zeros -2
 $5(7n^2 - 11n - 30)$ $n=-\frac{10}{7}, 3$
 $5(7n+10)(n-3)$

17) $7n^3 + 22n^2 + 3n$ Zeros 3
 $n(7n^2 + 22n + 3)$ $n=0, -\frac{1}{7}, -3$
 $n(7n+1)(n+3)$

19) $3n^2 - 28n - 20$ Zeros 2
 $(3n+2)(n-10)$ $n=-\frac{2}{3}, 10$

21) How many zeros are in each polynomial?

2) $x^3 - 10x^2 + 16x$ 3 zeros
 $x(x^2 - 10x + 16)$ $x=0, 8, 2$
 $x(x-8)(x-2)$

4) $b^3 + 20b^2 + 100b$ 3 zero
 $b(b^2 + 20b + 100)$ $b=0, -10$
 $b(b+10)^2$

6) $x^2 + 3x - 40$ 2 Zeros
 $(x+8)(x-5)$ $x=-8, 5$

8) $3p^2 - 20p - 32$ zero -2
 $(3p+8)(p-4)$ $p=-\frac{8}{3}, 4$

10) $7k^3 + 19k^2 + 10k$ Zeros 3
 $k(7k^2 + 19k + 10)$ $k=0, -\frac{5}{7}, -2$
 $k(7k+5)(k+2)$

12) $7x^2 + 47x - 72$ Zeros 2
 $(7x-9)(x+8)$ $x=\frac{9}{7}, -8$

14) $5v^2 - 22v - 15$ Zeros -2
 $(5v+3)(v-5)$ $v=-\frac{3}{5}, 5$

16) $30x^2 - 276x - 240$ Zeros -2
 $6(5x^2 - 46x - 40)$ $x=-\frac{4}{5}, 10$
 $6(5x+4)(x-10)$

18) $2a^3 - a^2$ Zeros -3
 $a^2(2a-1)$ $a=0, \frac{1}{2}$

20) $5x^4 + 26x^3 - 63x^2$ Zeros 4
 $x^2(5x^2 + 26x - 63)$ $x=0, \frac{9}{5}, -7$
 $x^2(5x-9)(x+7)$

22) What are the zeros of the above polynomials?