Factor by Grouping – Answers

1. $(8r^2+1)(r-8)$
2. $(3p^2+7)(4p-7)$
3. $(2x^2-5)(6x+1)$
4. $(2v^2+7)(3v-8)$
5. $3(3n^2-5)(7n+6)$
6. $3(7k^2+5)(k-4)$
7. $(5v^2+6)(5v+1)$
8. $(4v^2-5)(v-3)$
9. $(7x-3y)(8w+7k^2)$
10. $(6m-n^2)(7c+6d)$
11. $(5a+4b)(8c^2+5k^2)$
12. $(3x+4)(3x-4)$
13. $(2x+1)(2x-1)(x-2)$
14. $x(2x+3)(x+5)$
15. $(2x^2-1)(x+1)$
16. $x(3x-5)(x+2)$
17. $(3x+1)(3x-1)(x+3)$
18. $5(x+5)(x-5)$
19. $(x-z)(x-y)$
20. $(x+2)(x-2)(3x-2)=0$
    $x=-2,2,\frac{2}{3}$
21. $(x^2+1)(x-2)=0$
    $x=2$
22. $(x^2+2)(x^2-1)=0$
    $x=1,-1$

only include real roots

2. $12p^3-21p^2+28p-49$

$3p^2(4p-7)+7(4p-7)$

$(3p^2+7)(4p-7)$

19. $x^2-xy-xz+yz$

$x(x-y)-z(x-y)$

$(x-z)(x-y)$

20. $3x^3-2x^2-12x+8=0$

$x^2(3x-2)-4(3x-2)=0$

$(x^2-4)(3x-2)=0$

$x^2-4=0 \qquad 3x-2=0$

$x^2=4 \qquad 3x=2$

$x=\pm 2 \qquad x=2/3$