ANSWERS

1) f is differentiable on [-10, 10] because f' is continuous on this interval.
2) f is continuous on [-10, 10] because f is differentiable (as explained in #1).
3) x=-7, -1, 4, 8
4) f has a relative maximum when f' changes from + to -: x=-1, 8
5) f has a relative minimum when f' changes from - to +: x=-7, 4
6) f is increasing when f' is +: (-7, -1) U (4, 8)
7) f is decreasing when f' is -: (-10, -7) U (-1, 4) U (8, 10)
8) f has a point of inflection when f' has relative extrema: x=-3, 2, 6
9) f is concave up when f' is increasing: (-10, -3) U (2, 6)
10) f is concave down when f' is decreasing: (-3, 2) U (6, 10)

11) g is differentiable on [-2, 5] because g' is continuous on this interval.
12) g is continuous on [-2, 5] because g is differentiable (as explained in #1).
13) x=-2, 2, 4
14) g has a relative maximum when g' changes from + to -: x=2
15) g has a relative minimum when g' changes from - to +: x=4
16) g is increasing when g' is +: (-2, 2) U (4, 5)
17) g is decreasing when g' is -: (2, 4)
18) g has a point of inflection when g' has relative extrema: x=0, 3
19) g is concave up when g' is increasing: (-2, 0) U (3, 5)
20) g is concave down when g' is decreasing: (0, 3)

21) f is differentiable on [-3, 5] because f' is continuous on this interval.
22) f is continuous on [-3, 5] because f is differentiable (as explained in #1).
23) x=-2, 1, 4
24) f has a relative maximum when f' changes from + to -: x=-2
25) f has a relative minimum when f' changes from - to +: x=4
26) f is increasing when f' is +: (-3, -2) U (4, 5)
27) f is decreasing when f' is -: (-2, 1) U (1, 4)
28) f has a point of inflection when f' has relative extrema: x=-1, 1, 3
29) f is concave up when f' is increasing: (-1, 1) U (3, 5)
30) f is concave down when f' is decreasing: (-3, -1) U (1, 3)

31) g is differentiable on [-3, 7] because g' is continuous on this interval.
32) g is continuous on [-3, 7] because g is differentiable (as explained in #1).
33) x=-1, 2, 6
34) g has a relative maximum when g' changes from + to -: x=2
35) g has a relative minimum when g' changes from - to +: x=-1, 6
36) g is increasing when g' is +: (-1, 2) U (6, 7)
37) g is decreasing when g' is -: (-3, -1) U (2, 6)
38) g has a point of inflection when g' has relative extrema: x=1, 4
39) g is concave up when g' is increasing: (-3, 1) U (4, 7)
40) g is concave down when g' is decreasing: (1, 4)