

GRAPH THEORY: CLASS 3

1) Problem 1.27 page 26.

For the following pairs G, H of graphs, draw $G + H$ and $G \times H$.

a) $G = K_5$ and $H = K_2$.

b) $G = \overline{K_5}$ and $H = \overline{K_3}$.

c) $G = C_5$ and $H = K_1$.

2) Problem 2.19 page 41.

Construct an r -regular graph of order 6 and an s -regular graph of order 7 for all possible values of r and s .

3) Determine whether the following sequences are graphical. If yes, draw a corresponding graph.

$s_1 : 6, 5, 5, 4, 3, 2, 1$.

$s_2 : 5, 3, 3, 3, 3, 2, 2, 2, 1$.

4) Let G be a graph (not a multigraph). Show that at least two of its vertices must have the same degree.