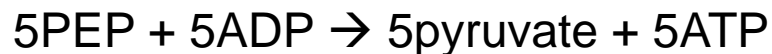
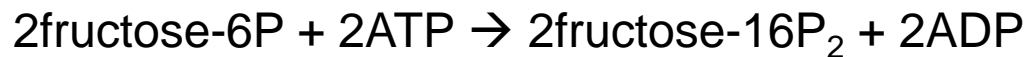
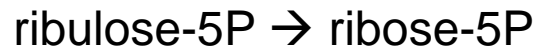
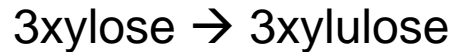


Solution E2

2A) Xylose via ABC transporter



2B) Xylose via ATP-independent transport

3xylose (extra) → 3xylose (intra)

3xylose → 3xylulose

3xylulose + 3ATP → 3xylulose-5P + 3ADP

xylulose-5P + ribose-5P → sedoheptulose-7P + glyceraldehyde-3P

xylulose-5P + erythrose-4P → fructose-6P + glyceraldehyde-3P

xylulose-5P → ribulose-5P

ribulose-5P → ribose-5P

sedoheptulose-7P + glyceraldehyde-3P → fructose-6P + erythrose-4P

2fructose-6P + 2ATP → 2fructose-16P₂ + 2ADP

2fructose-16P₂ → 2glycerone-P + 2glyceraldehyde-3P

2glycerone-P → 2glyceraldehyde-3P

5glyceraldehyde-3P + 5P_i + 5NAD → 5(3P-glycerate-P) + 5NADH

5(3P-glycerate-P) + 5ADP → 5glycerate-3P + 5ATP

5glycerate-3P → 5glycerate-2P

5glycerate-2P → 5PEP + 5H₂O

5PEP + 5ADP → 5pyruvate + 5ATP

3xylose + 5ADP + 5P_i + 5NAD → 5pyruvate + 5ATP + 5NADH + 5H₂O