Graphs with Tikz

Credit: https://github.com/HasibLearntogrow/LatexPractice

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Contents

1 Nodes:

1.1 Normal Node:

(*)

(1)   (A)

1.2 Normal Nodes with various shapes:

(1)   [2]

1.3 Normal Nodes with filled color and face color:

(3)

(1)   (1)
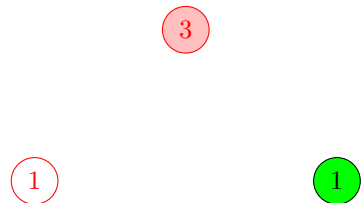
1.4 A solid node with outside title:

● A

B
B

•
B

2 Edges:

2.1 Normal edge between two or more nodes:

(3)

(1)———(2)
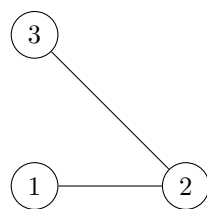
2.2 Normal edge with arrow and color between two or among more nodes:

X

1 —— 2
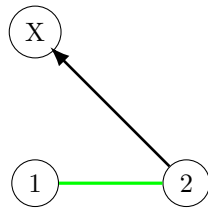
2.3 Curved edge with arrow between two or among more node:

1   A   x

2.4 Self loop in any node:

1   2

3 Practice:

3.1 Practice 01:

B   D

A   C   E
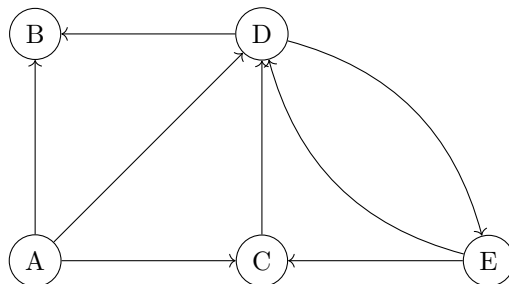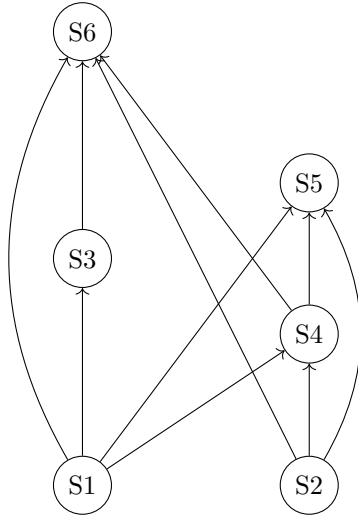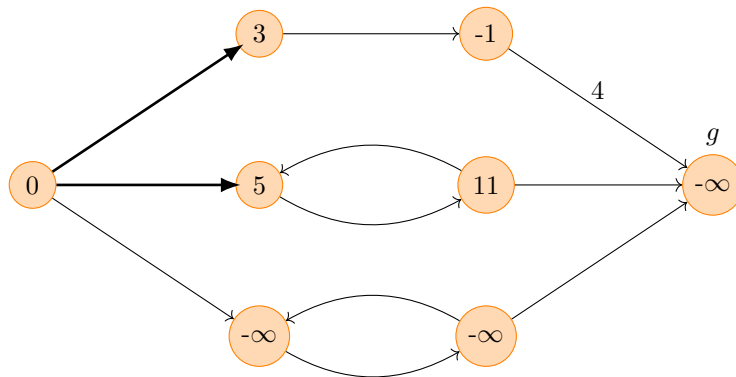
3.2 Practice 02:

S6 S5 S3 S4 S1 S2

3.3 Practice 3:

```
\begin{tikzpicture}
  \node(0) at (0,0)[circle,orange,fill= orange!30,text=black,draw
      ]{0};
  \node(3) at (3,2)[circle,orange,fill= orange!30,text=black,draw
      ]{3};
  \node(5) at (3,0)[circle,orange,fill= orange!30,text=black,draw
      ]{5};
  \node(i1) at (3,-2)[circle,orange,fill= orange!30,text=black,draw
      ]{-$\infty$};
  \node(-1) at (6,2)[circle,orange,fill= orange!30,text=black,draw
      ]{-1};
  \node(11) at (6,0)[circle,orange,fill= orange!30,text=black,draw
      ]{11};
  \node(i2) at (6,-2)[circle,orange,fill= orange!30,text=black,draw
      ]{-$\infty$};
  \node(i3) at (9,0)[circle,orange,fill= orange!30,text=black,label
      =above:$g$,draw]{-$\infty$};
%\usetikzlibrary{arrows.meta}
  \draw[->, >=Latex, line width=1pt, shorten >=-2pt] (0) to (3);
  \draw[->, >=Latex, line width=1pt, shorten >=-2pt] (0) -- (5);
  \draw[->] (0) to (i1);
  \draw[->] (3) to (-1);
  \draw[->, bend right =30] (5) to (11);
  \draw[->,bend right =30] (11) to (5);
  \draw[->, bend right =30] (i1) to (i2);
  \draw[->,bend right =30] (i2) to (i1);
  \draw[->] (-1) to  node[midway, above]{4}(i3);
  \draw[->] (11) to (i3);
  \draw[->] (i2) to (i3);

\end{tikzpicture}
```

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3.4 Practice 04:

```
1  \begin{tikzpicture}
2    \node(2) at (0,0)[text=black,fill=orange!20,label=\Large1,draw,
        scale=2]{2};
3    \node(5) at (0.8,0)[text=black,fill=orange!20,label=\Large2,draw,
        scale=2]{5};
4    \node(4) at (1.6,0)[text=black,fill=skyblue!80,label=\Large 3,
        draw,scale=2]{4};
5    \node(6) at (2.4,0)[text=black,fill=orange!20,label=\Large 4,draw
        ,scale=2]{6};
6    \node(1) at (3.2,0)[text=black,label=\Large 5,draw,scale=2]{1};
7
8    \draw[->,>=stealth,very thick,skyblue,bend left=100](1.75,-0.45)
        to (0.6,-0.47);
9    \draw[->,>=stealth,thick,orange,bend angle=50,bend right
        ](0.9,-0.47) to (1.5,-0.45);
10  \end{tikzpicture}
```
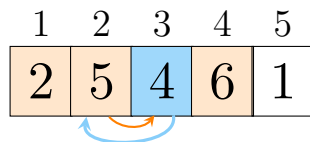
3.5 Practice 05:

```
1  \begin{tikzpicture}
2    \node(0) at (0,0)[text=black,fill=skyblue!80,draw,scale=4]{};
3    \node at (0.95,0)[text=black,fill=skyblue!80,draw,scale=2.7]{\
        tiny1};
4    \node(1) at (1.9,0)[text=black,fill=skyblue!80,draw,scale=4]{};
5
6    \node(2) at (4,0)[text=black,fill=orange!40,draw,scale=4]{};
7    \node at (4.95,0)[text=black,fill=orange!40,draw,scale=2.7]{\tiny
        2};
8    \node(3) at (5.9,0)[text=black,fill=orange!40,draw,scale=4]{};
9
10   \node(4) at (8,0)[text=black,fill=skyblue!80,draw,scale=4]{};
11   \node at (8.95,0)[text=black,fill=skyblue!80,draw,scale=2.7]{\
        tiny3};
12   \node(5) at (9.9,0)[text=black,fill=skyblue!80,draw,scale=4]{};
13
14   \node(6) at (12,0)[text=black,fill=orange!40,draw,scale=4]{};
15   \node at (12.95,0)[text=black,fill=orange!40,draw,scale=2.7]{\
        tiny4};
16   \node(7) at (13.9,0)[text=black,fill=orange!40,draw,scale=4]{};
17
18
19   \draw[->,>=stealth,pos=1](2.35,0.2) to (3.5,0.2);
20   \draw[->,>=stealth,thick] (3.5,-0.2)to(2.35,-0.2) ;
21   \draw[->,>=stealth,pos=1](6.35,0.2) to (7.5,0.2);
22   \draw[->,>=stealth,pos=1](7.5,-0.2) to (6.35,-0.2);
23   \draw[->,>=stealth,pos=1](10.35,0.2) to (11.5,0.2);
24   \draw[->,>=stealth,pos=1](11.5,-0.2) to (10.35,-0.2);
25
26   \draw[->](0.south) to(0,-1)to(15,-1) to (15,0)to(7.east);
27   \draw[->](7.north) to(13.9,1)to(-1,1) to (-1,0)to(0.west);
```

Participants by Race