Insert 41

A grey circle with black numbers

Description automatically generated with medium confidence

Insert 22

A picture containing circle

Description automatically generated

Insert 5

A picture containing circle

Description automatically generated

Single rotation because both parent and node are red

A picture containing circle

Description automatically generated

Insert 51

A picture containing circle

Description automatically generated

Node and parent are red, uncle is also red. So, change them to black. Root must be black.

A picture containing circle

Description automatically generated

Insert 48

A picture containing circle

Description automatically generated

Node and parent are both red. Double rotation

A picture containing circle

Description automatically generated

Insert 29

A picture containing circle

Description automatically generated

Node and parent are red. Uncle of node is red. So, push blackness from grandparent.

A picture containing circle

Description automatically generated

Insert 18

A picture containing circle

Description automatically generated

Insert 21

A picture containing circle

Description automatically generated

Node and parent are red. Single rotation.

A picture containing circle

Description automatically generated

Insert 45

A picture containing circle

Description automatically generated

Insert 3

A picture containing circle, earphone

Description automatically generated

Node and parent are red. Uncle also red. Push blackness down from grandparent.

A picture containing circle

Description automatically generated