CREATING A GRAPHIC CALCULATOR CLASS
To create a graphing calculator, understand how a graphene calculator works first
User input > Read Input > Instructions > Decisions > Perform Calculations > Display Results (output).
Parameters:

- JFrame Frame;
-

JTextField txtScalar, txtOffset;
JRadioButton rdbtnX, rdbtnX2, rdbtnX3, rdbtnLog, rdbtnSqrt;
JButton btnCheck;
JPanel canvas;
JLabel lblScalar, lblOffset, lblNewLabel

GRAPH METHOD ACCESSORS:
frame.setBounds(number 1, number 2, number 3, number 4)
canvas.setBounds(number 1, number 2, number 3, number 4)
lblScalar.setBounds(number 1, number 2, number 3, number 4)
txtScalar.setBounds(number 1, number 2, number 3, number 4)
lblOffset.setBounds(number 1, number 2, number 3, number 4)
textOffset.setBounds(number 1, number 2, number 3, number 4)
rdbtnX.setBounds(number 1, number 2, number 3, number 4)
rdbtnX2.setBounds(number 1, number 2, number 3, number 4)
rdbtnLog.setBounds(number 1, number 2, number 3, number 4)
rdbtnX3.setBounds(number 1, number 2, number 3, number 4)
rdbtnSqrt.setBounds(number 1, number 2, number 3, number 4)
btnCheck.setBounds(number 1, number 2, number 3, number 4)
lblNewLabel.setBounds(number 1, number 2, number 3, number 4)
g.drawLine(number 1, number 2, number 3, number 4)

Application()

```
txtScalar = new JTextField();
textOffset = new JTextField();
lblScalar = new JLabel("Scalar (m)");
lblOffset = new JLabel("Offset (b)");
rdbtnX = new JRadioButton(“X”);
rdbtnX2 = new JRadioButton("X^2");
rdbtnLog = new JRadioButton("Log(X)");
rdbtnX3 = new JRadioButton("X^3");
rdbtnSqrt = new JRadioButton("Sqrt(X)");
btnCheck = new JButton("Graph");
lblNewLabel = new JLabel("y = m * f (x) + b");
```

```
Frame.setLayout(null);
Frame.setVisible(true);
Frame.setSize(x,y);
Frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
Frame.setResizable(false);
```

```
rdbtnX.addActionListener();
rdbtnX2.addActionListener();
rdbtnX3.addActionListener();
rdbtnLog.addActionListener();
rdbtnSqrt.addActionListener();
```

```
Frame.add(canvas);  → adds frame to canvas
Frame.add(lblScalar);  → adds frame to lblScalar
Frame.add(txtScalar);  →  adds frame to txtScalar
Frame.add(lblOffset);  → adds frame to lblOffset
Frame.add(textOffset);  → adds frame to textOffset
Frame.add(rdbtnX);  → adds frame to X button
Frame.add(rdbtnX2);  → adds frame to X^2 button
Frame.add(rdbtnLog);  →  adds frame to Log(X) button
Frame.add(rdbtnX3):  → adds frame to X^3 button
Frame.add(rdbtnSqrt);  → adds frame to Sqrt(X) button
Frame.add(lblNewLabel);  → adds frame to y=m*f(x) label
```

paintComponent method → to draw on JPanel
isNumeric Method → Returns a boolean code.

```
drawGrid(Graphics g) {
drawX(Graphics g) {
```

```
drawX2(Graphics g) {
drawX3(Graphics g) {
drawLogX(Graphics g) {
drawSqrtX(Graphics g) {

if (operation==1) {
        drawX(g);
double dx = 0.001;
for(double x=-2; x<=2; x=x+dx) {
double y = scalar*x+offset;
int cX = (int) Math.round((x*100)+200);
int cY = (int) Math.round((-y*100)+200);

} else if (operation==2) {
        drawX2(g);
double dx = 0.001;
for(double x=-2; x<=2; x=x+dx) {
double y = scalar*(x*x)+offset;
int cX = (int) Math.round((x*100)+200);
int cY = (int) Math.round((-y*100)+200);

} else if (operation==3) {
        drawX3(g);
double dx = 0.001;
for(double x=-2; x<=2; x=x+dx) {
double y = scalar*(x*x*x)+offset;
int cX = (int) Math.round((x*100)+200);
int cY = (int) Math.round((-y*100)+200);

} else if (operation==4) {
        drawLogX(g);
double dx = 0.001;
for(double x=-2; x<=2; x=x+dx) {
double y = scalar*(Math.log(x))+offset;
int cX = (int) Math.round((x*100)+200);
int cY = (int) Math.round((-y*100)+200);

} else if (operation==5) {
        drawSqrtX(g);
double dx = 0.001;
for(double x=-2; x<=2; x=x+dx) {
double y = scalar*(Math.sqrt(x))+offset;
int cX = (int) Math.round((x*100)+200);
int cY = (int) Math.round((-y*100)+200);
```

```
}
if (isNumeric(txtScalar.getText())) {
scalar = Double.parseDouble(txtScalar.getText());
} else {
        scalar = 1.0;
}

if(isNumeric(textOffset.getText())) {
. . .
} else {
. . .

if (rdbtnX.isSelected()) {
Set all others to false
Operation = 1;

if (rdbtnX2.isSelected()) {
. . .
Operation = 2;

if (rdbtnX3.isSelected()) {
. . .
Operation = 3;

if (rdbtnLog.isSelected()) {
. . .
Operation = 4;

if (rdbtnSqrt.isSelected()) {
. . .
Operation = 5;

canvas.repaint()
```