Math 451

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Flow Control

1. Conditionals → If, Switch
2. loops → for, while

If a == 3
  action
else if a == 2
  action
else
  action
end if

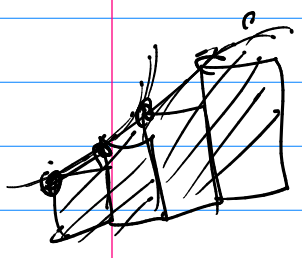
Switch variable_name
  case possible value
    action
  case possible value
    action
  otherwise

Review (for next week)

→ Taylor / Maclaurin series / polys

→ Numeric Integration

left end point, right end point, etc



loops

for var = vector

action

end

while [logical]

action

end

$ax^2+bx+c=0$ $\quad x^2-2x-3=0$

$x^2+\frac{b}{a}x+\left(\frac{b}{2a}\right)^2=-\frac{c}{a}+\left(\frac{b}{2a}\right)^2$ $\quad (x-3)(x+1)=0$

$\left(x+\frac{b}{2a}\right)^2-\left(\frac{b^2-4ac}{4a^2}\right)=0$ $\quad (x+1)^2$

$\left(\left(x+\frac{b}{2a}\right)-\sqrt{\left(\frac{b^2-4ac}{4a^2}\right)}\right)$ $\quad x^2+2(1)(x)+(1)^2$

$\left(\left(x+\frac{b}{2a}\right)+\sqrt{\frac{b^2-4ac}{4a^2}}\right)=0$

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a} \qquad ax^2+bx+c=0$$

$(x+1)(x-3)=0 \rightarrow x=-1,3$

$x^2-2x-3=0$