Index

A

Asymptotically stable *p.*7

B

Bendixson's theorem *pp.*25 – 29

Bifurcation *pp.*12 – 13

Bifurcation (fold) *pp.*12 – 13

Bifurcation (transcritical) *pp.*12 – 15

Bifurcation diagram *pp.*12, 15 – 17

C

Carrying capacity *p.*9

Centers (equilibrium point) *pp.*22, 26

Coordinate transformation matrix *pp.*18, 20

D

Divergence *pp.*25 – 29

E

Equilibrium point *pp.*3 – 4

F

Finite escape time *pp.*9 – 10

Focus node *p.*22

Fold bifurcation *pp.*12 – 13

G

Green's theorem *pp.*25 – 27

H

Hartman grobman theorem *pp.*23 – 24

Homeomorphic *p.*23

Hyperbolic equilibrium point *pp.*22 – 24

L

Limit cycle *pp.*10 – 12

Linearization at a fixed point *pp.*5 – 8, 23 – 24

Logistic equation *p.*9

Lorenz attractor *p.*12

M

Metzler matrix *p.*31

N

Node *p.*21

P

Pendulum *pp.*7 – 8

Periodic orbits *pp.*25 – 32

Phase portrait *pp.*5, 17 – 19

Pitchfork bifurcation *pp.*12, 15 – 17

Poincare-bendixson criterion *p.*32

Positive invariant set *pp.*21, 29 – 32

Positive system *p.*31

Predator/prey model *pp.*30 – 31

R

Region of attraction $p.15$

S

Saddle node $pp.19-21$
Sink node $pp.19, 21$
Source node $pp.19, 21$
Stability $p.5$
Stable $p.5$
Subcritical pitchfork bifurcation $p.17$
Supercritical pitchfork bifurcation $pp.15-16$

T

Taylor series expansion $p.6$
Transcritical bifurcation $pp.12-15$

V

Van der pol oscillator $pp.11-12$