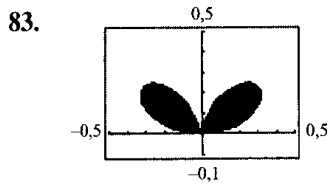
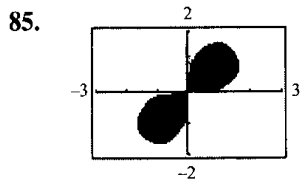


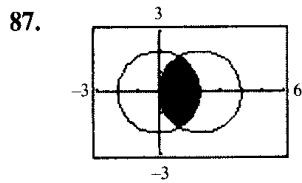
$$A = 2 \left(\frac{1}{2} \right) \int_0^\pi (2 + \cos \theta)^2 d\theta \approx 14,14$$



$$A = 2 \left(\frac{1}{2} \right) \int_0^{\pi/2} \sin^2 \theta \cos^4 \theta d\theta \approx 0,10$$



$$A = 2 \left(\frac{1}{2} \right) \int_0^{\pi/2} 4 \sin 2\theta d\theta \approx 4$$



$$A = 2 \left(\frac{1}{2} \int_0^{\pi/3} 4 d\theta + \frac{1}{2} \int_{\pi/3}^{\pi/2} 16 \cos^2 \theta d\theta \right) \approx 4,91$$

89. $8a$

91. $r = 10 \sin \theta$

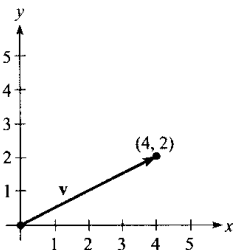
93. $r = \frac{4}{1 - \cos \theta}$

95. $r = \frac{5}{3 - 2 \cos \theta}$

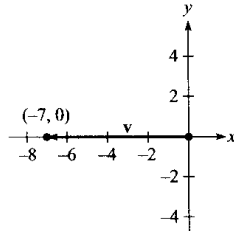
CAPÍTULO 10

Sección 10.1 (página 979)

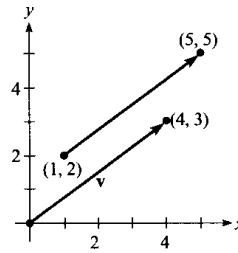
1. $\langle 4, 2 \rangle$



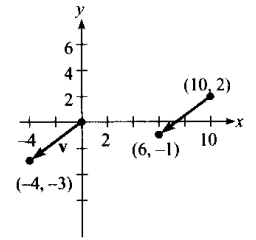
3. $\langle -7, 0 \rangle$



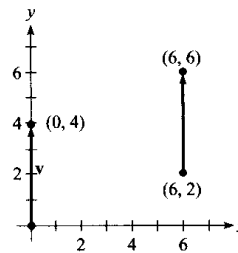
5. $\langle 4, 3 \rangle$



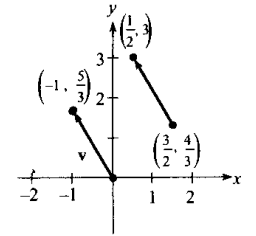
7. $\langle -4, -3 \rangle$



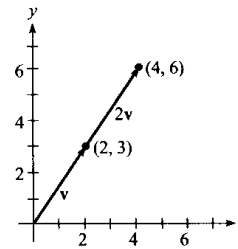
9. $\langle 0, 4 \rangle$



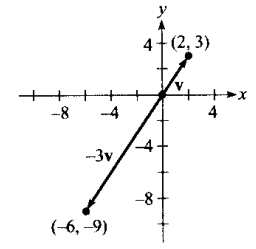
11. $\langle -1, \frac{5}{3} \rangle$



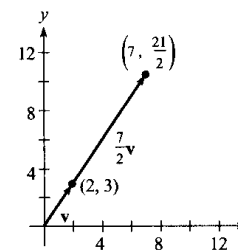
13. a) $\langle 4, 6 \rangle$



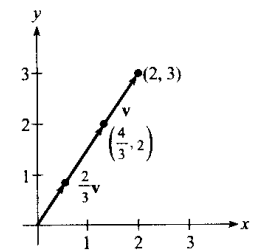
b) $\langle -6, -9 \rangle$



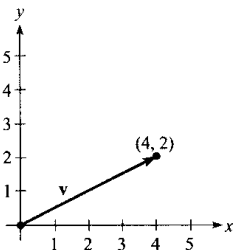
c) $\langle 7, \frac{21}{2} \rangle$



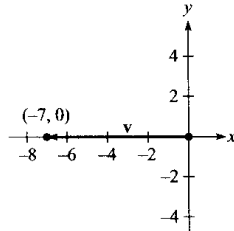
d) $\langle \frac{4}{3}, 2 \rangle$



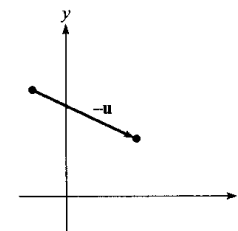
1. $\langle 4, 2 \rangle$



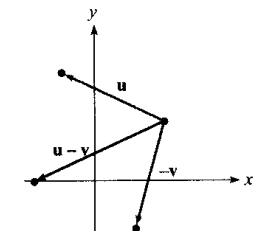
3. $\langle -7, 0 \rangle$



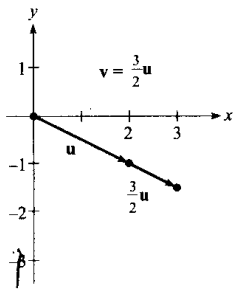
15.



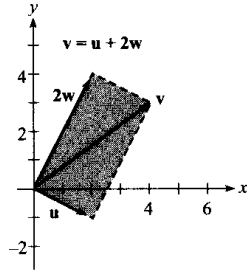
17.



19. $\langle 3, -\frac{3}{2} \rangle$



21. $\langle 4, 3 \rangle$



23. $a = 1, b = 1$ 25. $a = 1, b = 2$ 27. $a = \frac{2}{3}, b = \frac{1}{3}$

29. $(3, 5)$ 31. 5 33. $\sqrt{61}$ 35. 4

37. a) $\sqrt{2}$ b) $\sqrt{5}$ c) 1 d) 1
e) 1 f) 1

39. a) $\sqrt{5}/2$ b) $\sqrt{13}$ c) $\sqrt{85}/2$ d) 1
e) 1 f) 1

43. $\langle 2\sqrt{2}, 2\sqrt{2} \rangle$ 45. $\langle 1, \sqrt{3} \rangle$

47. a) $\pm \frac{1}{\sqrt{10}} \langle 1, 3 \rangle$ b) $\pm \frac{1}{\sqrt{10}} \langle 3, -1 \rangle$

49. a) $\pm \frac{1}{5} \langle -4, 3 \rangle$ b) $\pm \frac{1}{5} \langle 3, 4 \rangle$

51. $\langle 3, 0 \rangle$ 53. $\langle -\sqrt{3}, 1 \rangle$

55. $\left(\frac{3 + \sqrt{2}}{\sqrt{2}}\right)\mathbf{i} + \left(\frac{3}{\sqrt{2}}\right)\mathbf{j}$

57. $(2 \cos 4 + \cos 2)\mathbf{i} + (2 \sin 4 + \sin 2)\mathbf{j}$

59. $-\frac{\sqrt{2}}{2}\mathbf{i} + \frac{\sqrt{2}}{2}\mathbf{j}$ 63. 1,33, 132,5°

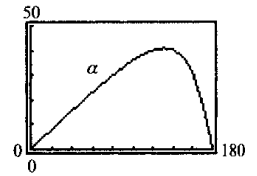
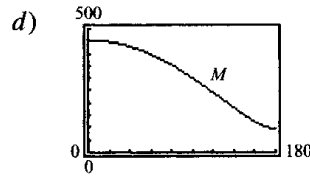
65. a) $\theta = 0^\circ$ b) $\theta = 180^\circ$ c) No

67. a) Dirección: $\alpha = 11,8^\circ$
Magnitud: 440,2 N

b) $M = \sqrt{(275 + 180 \cos \theta)^2 + (180 \sin \theta)^2}$
 $\alpha = \arccos\left(\frac{36 \cos \theta + 55}{\sqrt{3.960 \cos \theta + 4.321}}\right)$

c)	θ	0°	30°	60°	90°
	M	455,0	440,2	396,9	328,7
	α	0°	$11,8^\circ$	$23,1^\circ$	$33,2^\circ$

θ	120°	150°	180°
M	241,9	149,3	95,0
α	$40,1^\circ$	$37,1^\circ$	0°



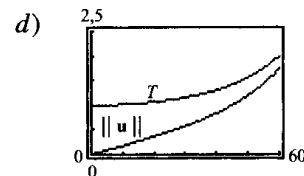
e) M decrece porque las fuerzas, al variar θ de 0° a 180° , pasan de actuar en la misma dirección a actuar en direcciones opuestas.

69. $71,3^\circ, 228,5$ libras 71. $(-4, -1), (6, 5), (10, 3)$

73. a) Tensión $\approx 1,1547$ libras b) $T = \sec \theta$
 $\|\mathbf{u}\| \approx 0,5774$ libras $\|\mathbf{u}\| = \operatorname{tg} \theta$

c)	θ	0°	10°	20°	30°
	T	1	1,0154	1,0642	1,1547
	$\ \mathbf{u}\ $	0	0,1763	0,3640	0,5774

θ	40°	50°	60°
T	1,3054	1,5557	2
$\ \mathbf{u}\ $	0,8391	1,1918	1,7321



e) Ambas son funciones crecientes para $0^\circ \leq \theta \leq 60^\circ$
f) $\lim_{\theta \rightarrow \pi/2^-} T = \infty, \lim_{\theta \rightarrow \pi/2^-} \|\mathbf{u}\| = \infty$

75. Horizontal: 1.193,43 pies/s
Vertical: 125,43 pies/s

77. $38,3^\circ$ noroeste 79. $T_2 = 157,316$
 $882,9$ km/h $T_3 = 3.692,482$

84. Verdadero 85. Verdadero

86. Verdadero 87. Falso: $a = b = 0$

88. Falso: $\|\mathbf{ai} + \mathbf{bj}\| = \sqrt{2}|a|$ 89. Verdadero

Sección 10.2 (página 988)

