

- 54 (a) 605 N; (b) 320 N
- 55 (a) 4.85 N, 2.70 N; (b) 13.0 N, 7.23 N;
(c) 0.990 N, 0.550 N; (d) 0 N;
(e) 4.85 N, 2.70 N
- 56 (a) 18.9 m; (b) 3.78 m
- 57 (a) 46.4 m; (b) 5.39 m
- 58 (a) $\frac{M_1 D}{M_1 + M_2}$; (b) $\frac{M_2}{M_1}$
- 59 $(\mu \cos \theta + \sin \theta)g$
- 60 (a) 14.2 N; (b) 7.99 m/s², 8.70 m/s²;
(c) 64.2 N, non c'è movimento
- 61 1.54mg
- 62 1.11 m/s²
- 63 0.107 kg

Capitolo 4

Verifiche

1 c; 2 c; 3 a; 4 b; 5 c; 6 b; 7 a; 8 c; 9 d; 10 b

Problemi

- 1 60.0 N, 25.0 N
- 2 (a) 44.0 N; (b) 12.0 N
- 3 $(-47.8 \mathbf{i} - 397 \mathbf{j}) \text{ N}$
- 4 $(84.1 \mathbf{i} - 108.9 \mathbf{j}) \text{ N}$
- 5 (a) 180 j N, -90 j N, -90 j N;
(b) 205 j N, -90 j N, -90 j N
- 6 (a) 582 N; (b) 1703 N
- 7 1072 N
- 8 416 N
- 9 28.3°
- 10 653 N
- 11 50.0 N
- 12 (a) 95.5 N; (b) 33.0 N
- 13 655 N, 869 N
- 14 940 N, 604 N
- 15 230 N, 193 N
- 16 1382 N, 783 N, 1470 N, 503 N
- 17 1128 N, 489 N, 639 N
- 18 261 N; 210 N
- 19 300 N, 300 N, 300 N, 600 N, 300 N
- 20 180 N
- 21 0; 120 N · m, -150 N · m, 303 N · m, 0
- 22 -463 N · m, -193 N · m, 240 N · m, 0, 0
- 23 (a) 2.00 m, 0, 0, 2.00 m, 2.83 m;
(b) -2.00 F₁, 0, 0, 2.00 F₄, 2.83 F₅
- 24 (a) 57.6 N · m; (b) 28.8 N · m
- 25 400 N
- 26 1000 N · m
- 27 2.00 × 10⁻³ N · m
- 28 0.655 m

- 29 120 N
- 30 1.0 m
- 31 253 N, 293 N
- 32 320 N
- 33 4000 N
- 34 0.870 m
- 35 1279 N, 822 N, 140 N
- 36 (a) 11.20 N; (b) 2800 N, 11.65 N
- 37 6.00 m
- 38 630 N, 470 N
- 39 (a) 1987 N; (b) -320 N, 2491 N
- 40 1396 N, 970 N, 485 N, 2570 N
- 41 21.8°
- 42 52.2 N, 70.4 N
- 43 $F_p \left(1 + \frac{L}{2b}\right) \cos \theta$
- 44 0.152
- 45 36.4°
- 46 (a) 29 N, 108 N; (b) 141.45 N
- 47 1512 N
- 48 559 N
- 49 1.13 m
- 50 $F_2 > F_1$

Capitolo 5

Verifiche

1 c; 2 c; 3 b; 4 d; 5 a; 6 b; 7 d; 8 a; 9 b; 10 d

Problemi

- 1 70.0 J
- 2 2078 J
- 3 8222 J
- 4 8575 N, -3.09 × 10⁵ J
- 5 720 J
- 6 40.0 m
- 7 4.00 m/s
- 8 1176 J
- 9 3528 J
- 10 1116 J
- 11 1868 J
- 12 720 J
- 13 0.136 CV
- 14 200 W
- 15 12.0 W
- 16 1960 W
- 17 4650 N
- 18 3.00 × 10⁴ W, 40.8 CV
- 19 0.239 m/s
- 20 0.294 W, 4.0 × 10⁻⁴ CV
- 21 1.31 s