

Unless otherwise mentioned, these problems should be solvable using a basic calculator. Practice clear communication by showing all work (free body diagrams, algebra, etc). This will be required to receive full credit on any graded problems.

1. Book problems:

(a) 8.103

(b) 8.108

Additional Practice Problems: 8.111, 8.122, 8.127

The quiz problem will not be selected from these additional practice problems. However, these exercises contain important elements of the course and similar problems may appear on the exam.

Solution:

8.103 2.34 ft.

8.108 $\mu_s e^{\mu_s \pi/2} = 1$ solved numerically: $\mu_s = 0.475$

2. Book problems:

- (a) 9.2
- (b) 9.6
- (c) 9.41
- (d) 9.42

Additional Practice Problems: 9.44

The quiz problem will not be selected from these additional practice problems. However, these exercises contain important elements of the course and similar problems may appear on the exam.

Solution:

9.2 $3a^3b/10$

9.6 $ab^3/6$

9.41 $\bar{I}_x = 46.8 \times 10^6 \text{ mm}^4$, $\bar{I}_y = 13.89 \times 10^6 \text{ mm}^4$

9.42 $\bar{I}_x = 479 \times 10^3 \text{ mm}^4$, $\bar{I}_y = 149.7 \times 10^3 \text{ mm}^4$