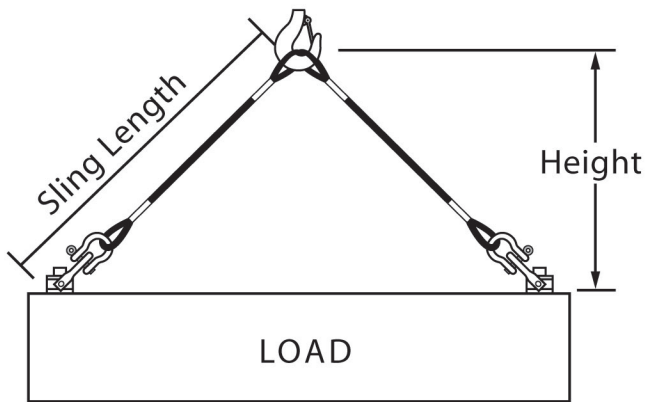# ANSWER KEY: Sling Tension

1. **What is the load in tons on each sling for a load rigged as in the figure below?**

Load Weight = 13,000 pounds
Sling Length = 25 feet
Height from Load to Hook = 10 feet

Substitute the numbers into the formula:

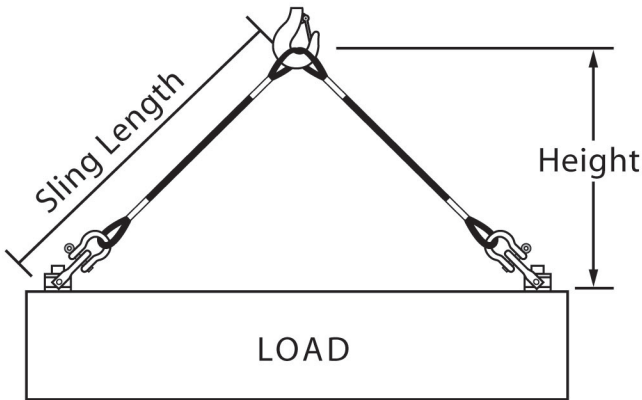$$\frac{\text{load weight x sling length}}{\text{number of slings x height from load to hook}}$$

$$= \frac{13,000 \times 25}{2 \times 10}$$

$$= \frac{325,000}{20}$$

$$= 16,250 \text{ pounds}$$

2. What is the load in tons on each sling for a load rigged as in the figure below? Round off the answer to two decimal places.

> Load Weight = 40 tons
> Sling Length = 42 feet
> Height from Load to Hook = 18 feet

Substitute the numbers into the formula:

$$\frac{\text{load weight x sling length}}{\text{number of slings x height from load to hook}}$$
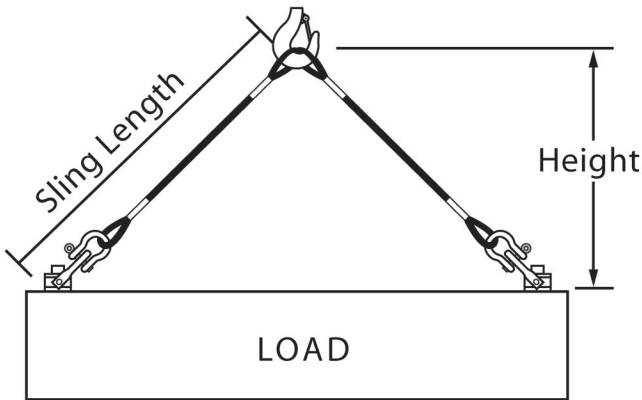
$$= \frac{40 \times 42}{2 \times 18}$$

$$= \frac{1680}{36}$$

$$= 46.67 \text{ tons}$$

3. What is the load in tons on each sling for a load rigged as in the figure below? Round off the answer to two decimal places.

Load Weight = 4,762 kg
Sling Length = 5 m
Height from Load to Hook = 4 m

Substitute the numbers into the formula:

$$\frac{\text{load weight x sling length}}{\text{number of slings x height from load to hook}}$$
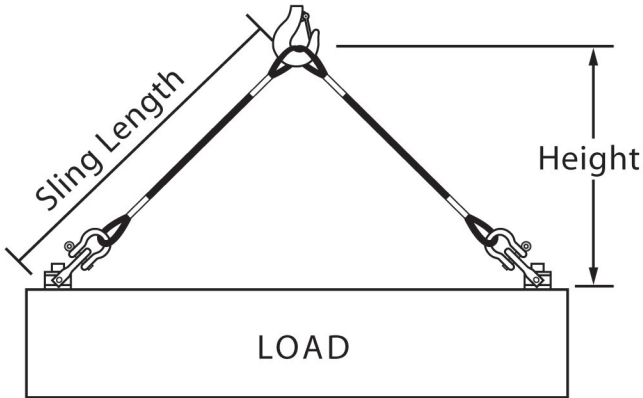
$$= \frac{4,762 \times 5}{2 \times 4}$$

$$= \frac{23,810}{8}$$

= 2,976.25 kg

4. What is the load in tons on each sling for a load rigged as in the figure below?

Load Weight = 32 tonnes
Sling Length = 6 m
Height from Load to Hook = 3 m

Substitute the numbers into the formula:

$$\frac{\text{load weight x sling length}}{\text{number of slings x height from load to hook}}$$

$$= \frac{32 \times 6}{2 \times 3}$$

$$= \frac{192}{6}$$

= 32 tonnes