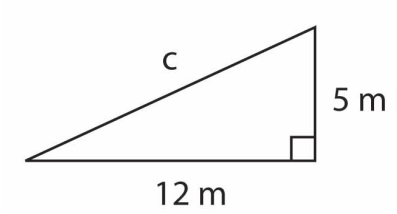
BC Crane Safety
Crane Certification and Licensing Authority

ANSWER KEY: Pythagorean Theorem

1. **Determine the length of the unknown side of the triangle. Round off the answer to two decimal places.**



From the figure, we know that:

- **Side 'a' is 5 m.**
- **Side 'b' is 12 m.**
- **Side 'c' is unknown.**

Substitute the known numbers into the formula:

$a^2 + b^2 = c^2$

$5^2 + 12^2 = c^2$

$25 + 144 = c^2$

$169 = c^2$

$\sqrt{169} = c$

c = 13.00 m

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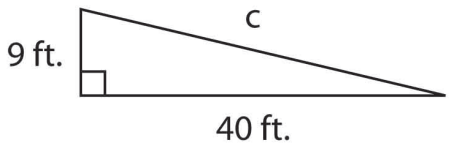
2. **Determine the length of the unknown side of the triangle. Round off the answer to two decimal places.**



From the figure, we know that:

- **Side 'a' is 9 ft.**
- **Side 'b' is 40 ft.**
- **Side 'c' is unknown.**

Substitute the known numbers into the formula:

$a^2 + b^2 = c^2$

$9^2 + 40^2 = c^2$

$81 + 1600 = c^2$

$1681 = c^2$

$\sqrt{1681} = c$

c = 41.00 ft.

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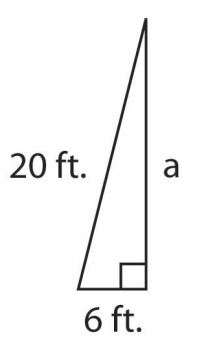
3. **Determine the length of the unknown side of the triangle. Round off the answer to two decimal places.**



From the figure, we know that:

- **Side 'a' is unknown.**
- **Side 'b' is 6 ft.**
- **Side 'c' is 20 ft.**

Substitute the known numbers into the formula:

$c^2 - b^2 = a^2$

$20^2 - 6^2 = a^2$

$400 - 36 = a^2$

$\sqrt{364} = a$

a = 19.08 ft.

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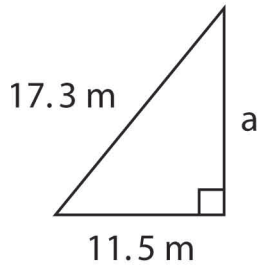
4. Determine the length of the unknown side of the triangle. Round off the answer to two decimal places.



From the figure, we know that:

- **Side 'a' is unknown.**
- **Side 'b' is 11.5 m**
- **Side 'c' is 17.3 m**

Substitute the known numbers into the formula:

$c^2 - b^2 = a^2$

$17.3^2 - 11.5^2 = a^2$

$299.29 - 132.25 = a^2$

$\sqrt{167.04}$ = a

a = 12.92 m

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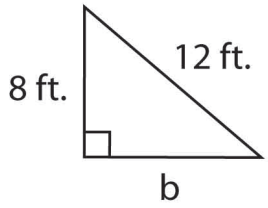
5. **Determine the length of the unknown side of the triangle. Round off the answer to two decimal places.**



From the figure, we know that:

- **Side 'a' is 8 ft.**
- **Side 'b' is unknown.**
- **Side 'c' is 12 ft.**

Substitute the known numbers into the formula:

$c^2 - a^2 = b^2$

$12^2 - 8^2 = b^2$

$144 - 64 = b^2$

$\sqrt{80} = b$

b = 8.94 ft.

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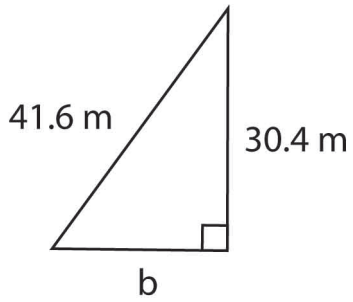
6. **Determine the length of the unknown side of the triangle. Round off the answer to two decimal places.**



From the figure, we know that:

- **Side 'a' is 30.4 m**
- **Side 'b' is unknown.**
- **Side 'c' is 41.6 m**

Substitute the known numbers into the formula:

$c^2 - a^2 = b^2$

$41.6^2 - 30.4^2 = b^2$

$1730.56 - 924.16 = b^2$

$\sqrt{806.40} = b$

b = 28.40 m