Matchsticks

This problem gives you the chance to:
• show understanding of volumes
• apply your knowledge to a practical situation

Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick? 
   Show your calculation.
   \( 0.02 \text{ inches} \)

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.
   \( \frac{1}{3} \pi (1 \text{ foot} \cdot 12 \text{ in})^2 \cdot 80 \text{ feet} \)
   \( \frac{1}{3} \cdot 3.14 \cdot 144 \cdot 80 = 83.65 \)
   \( 80 \text{ feet} \cdot 12 \)
   \( 1 \text{ foot} \cdot 12 \)
   \( 83.65 \div 0.02 \)
   \( 4183.12 \cdot 144 \)
Matchsticks

This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately $\frac{1}{10}$ inch by $\frac{1}{10}$ inch by 2 inches.

1. What is the volume of a matchstick? 
   Show your calculation.
   \[ \frac{1}{50} \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula $\frac{1}{3} \pi r^2 h$, where $r$ feet is the radius of the base of the cone and $h$ feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.
   \[ \frac{1}{3} \pi (1^2) \times 80 \]
   \[ 83.77 \times 50 \]
Matchsticks

This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( 1 \frac{1}{10} \) inch by \( 1 \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick?
   Show your calculation.

\[
\frac{1}{10} \cdot \frac{1}{10} \cdot 2 = 0.02 \quad \checkmark
\]

2. A tree trunk can be thought of as an approximate cone of wood.

The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
Show your work.

\[
\frac{83.77}{0.02} = 4188.5
\]
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This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick? Show your calculation.
   \[
   \frac{1}{10} \times \frac{1}{10} \times 2 
   \]
   \[
   \frac{1}{50} \checkmark
   \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet? Show your work.
   \[
   \frac{1}{3} \times 80 \checkmark
   \]
   \[
   = 84 \checkmark
   \]
Matchsticks

This problem gives you the chance to:
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• apply your knowledge to a practical situation

Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick?
Show your calculation.

\[ \frac{1}{10} \times \frac{1}{10} \times 2 = \frac{1}{50} \]

2. A tree trunk can be thought of as an approximate cone of wood.

The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
Show your work.

\[ \frac{1}{3} \times 80 = 83.7758041 \times 123 \times 56 \]

\[ 603600 \times \frac{x}{\text{matchsticks}} \]
Matchsticks

This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick?  \( \frac{1}{50} \)  \( \checkmark \)

Show your calculation.

\[ \frac{1}{3} \cdot \pi \cdot 1^2 \cdot 80 \]
\[ = \frac{83.77}{50} \]
\[ = 4188.79 \cdot 12 \cdot 12 \cdot 12 \]

2. A tree trunk can be thought of as an approximate cone of wood.

The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
Show your work.  \( 7200000 \)  \( \checkmark \)  \( \frac{2}{1} \)
Matchsticks

This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \text{ inch by } \frac{1}{10} \text{ inch by } 2 \text{ inches.} \)

1. What is the volume of a matchstick? 
   Show your calculation.

   \[0.02\]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.

\[ \frac{1}{3} \pi r^2 h = 83.77 \times 0.02 \times \frac{4188}{79} \]

   \[4188 \times 0\]
Matchsticks

This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately $\frac{1}{10}$ inch by $\frac{1}{10}$ inch by 2 inches.

1. What is the volume of a matchstick? Show your calculation.

$$\frac{1}{10} \cdot \frac{1}{10} \cdot 2 = .02$$

2. A tree trunk can be thought of as an approximate cone of wood.

The volume of a cone is found using the formula $\frac{1}{3} \pi r^2 h$, where $r$ feet is the radius of the base of the cone and $h$ feet is the height of the cone.

How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet? Show your work.

$$\frac{1}{3} \cdot \pi \cdot 1^2 \cdot 80 = 83.78$$

$$83.78 \cdot 12 \cdot .02$$

$$28895 	imes 1$$

$$14472 \cdot .02$$
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This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick? Show your calculation.

\[
\frac{1}{10} \cdot \frac{1}{10} \cdot 2
\]

2. A tree trunk can be thought of as an approximate cone of wood.

The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet? Show your work.

\[
\frac{1}{3} \pi (1)^2 \cdot 80 \cdot 12^3
\]
Matchsticks
This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately $\frac{1}{10}$ inch by $\frac{1}{10}$ inch by 2 inches.

1. What is the volume of a matchstick?
   Show your calculation.
   \[
   \frac{1}{10} \times \frac{1}{10} = \frac{1}{100} \times 2 = .02
   \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula $\frac{1}{3} \pi r^2 h$, where $r$ feet is the radius of the base of the cone and $h$ feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.
   \[
   \frac{1}{3} \pi \times 1^2 \times 80 \checkmark \\
   3.14 \times 1.80 = 251 \div \frac{1}{3} = 83.775 = 84
   \]
Matchsticks

This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick? Show your calculation.

\[
\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{2}{1} = \frac{1}{50}
\]

2. A tree trunk can be thought of as an approximate cone of wood.

The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet? Show your work.

\[
\frac{1}{3} \pi (1^2)(80) \quad \sqrt{83.7758041} \\
\frac{1}{3} \pi (80) \\
\frac{1}{3} \pi (80) \\
\left(1.04719755\right)(80) / \\
83.7758041
\]
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This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick? Show your calculation.
   \[ \frac{1}{10} \cdot \frac{1}{10} \cdot 2 = 0.02 \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet? Show your work.
   \[ \approx 145000 \times 0.1 \]
   \[ 434293.7684 \div 3 = 144764 \]
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This problem gives you the chance to:
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Matchsticks are rectangular prisms of wood measuring approximately $\frac{1}{10}$ inch by $\frac{1}{10}$ inch by 2 inches.

1. What is the volume of a matchstick? \[0.02 \text{ inches}^3\]
   Show your calculation.
   \[
   \frac{1}{10} \times \frac{1}{10} \times 2 = V
   \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula $\frac{1}{3} \pi r^2 h$, where $r$ feet is the radius of the base of the cone and $h$ feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.
   \[
   \frac{1}{3} \pi \times 1^2 \times 80
   \]
   \[
   \frac{1}{3} \pi \times 80
   \]
   \[
   1.05 \times 80
   \]
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick? 
   Show your calculation.

   \[ \frac{1}{10} \times \frac{1}{10} \times 2 = \frac{1}{50} \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.

   \[
   \frac{1}{3} \pi \cdot 1^2 \cdot 80 = 82.9
   \]

   \[
   82.9 \div 0.2 = 414.6\text{.}9
   \]
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Matchsticks are rectangular prisms of wood measuring approximately \( \frac{1}{10} \) inch by \( \frac{1}{10} \) inch by 2 inches.

1. What is the volume of a matchstick?
   Show your calculation.
   \[
   \left( \frac{1}{10} \right)^2 \cdot 2 = \frac{2}{100} = 0.02
   \]

2. A tree trunk can be thought of as an approximate cone of wood.

   The volume of a cone is found using the formula \( \frac{1}{3} \pi r^2 h \), where \( r \) feet is the radius of the base of the cone and \( h \) feet is the height of the cone.

   How many matchsticks can be made from a tree with a trunk with a base radius of 1 foot and a height of 80 feet?
   Show your work.
   \[
   \frac{1}{3} \pi \cdot 1^2 \cdot 80 = \frac{1}{3} \pi \cdot 1 \cdot 80 = \frac{80\pi}{3}
   \]
   \[
   = 960
   \]
   \[
   144765 \div \frac{1}{50} = 7238229
   \]