Jane's T.V.

This problem gives you the chance to:
• use Pythagoras' theorem

Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? $27.2$

Show how you know.

$$32^2 + h^2 = 42^2$$
$$1024 + h^2 = 1764$$
$$h^2 = 1764 - 1024$$
$$h^2 = 740$$
$$h = \sqrt{740}$$
$$h = 27.2$$

2. What is the area of the screen?

$27.2 \times 32 = 870.4$ square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out

$$40^2 + 32^2 = s^2$$
$$1600 + 1024 = 2624$$
$$s = \sqrt{2624}$$
$$s = 51.2$$
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1. What is the height of the screen? 
   \[ 32^2 + a^2 = 42^2 \]
   \[ 1024 + a^2 = 1764 \]
   \[ a^2 = 1764 - 1024 \]
   \[ a^2 = 740 \]
   \[ a = \sqrt{740} \approx 27.2 \]  

2. What is the area of the screen?
   \[ 32 \times 27.2 = 870.4 \text{ square inches} \]

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?
   Show how you figured this out
   \[ \frac{40}{32} = \frac{5}{4} \]
   \[ \frac{80}{1280} \times x \]
   \[ 1280x \text{ inches} \]

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1. What is the height of the screen? 27.27

Show how you know.

\[ a^2 + b^2 = c^2 \]

\[ 32^2 + b^2 = 42^2 \]

\[ 42^2 - 32^2 = b^2 \]

\[ 1764 - 1024 = 740 \]

\[ \sqrt{740} \]

2. What is the area of the screen? 100.53 square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? 51.2 inches

Show how you figured this out

\[ a^2 + b^2 = \]

\[ 1600 + 1024 = 2624 \]

\[ \sqrt{2624} = 51.2 \]
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This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? 27.2

Show how you know.

\[ 32^2 + b^2 = 42^2 \]
\[ 1024 + b^2 = 1764 \]
\[ b^2 = 740 \]
\[ b = \sqrt{740} \approx 27.2 \]

2. What is the area of the screen?

\[ 3.14 \times 27.2 = 85.40 \text{ square inches} \]

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out.

\[ 3.14 \times 40^2 \times 4 \]
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This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? \(27.20\) \(\checkmark\)
   
   Show how you know.

   \[
   a^2 + b^2 = c^2
   \]

   \[
   32^2 + 32^2 = 42^2
   \]

   \[
   b^2 = 27.20 \checkmark
   \]

2. What is the area of the screen? \(1764\) \(x\) square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? \(26024\) inches
   
   Show how you figured this out

   \[
   32^2 + 40^2 = c^2
   \]

   \[
   c^2 = 26024 \checkmark
   \]

   \[
   c = 51.22 \checkmark
   \]
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• use Pythagoras' theorem

Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? \[ \sqrt{1740} = a \]

Show how you know.

I wrote the equation but I added a variable for the height. I did \[ 32^2 + a^2 = 42^2 \]
the opposite and came with \( \sqrt{1740} \).

2. What is the area of the screen? \[ \frac{42^2 - 32^2}{2} = \sqrt{1740} \] \[ \frac{32 \times 1740}{2} \]

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? Show how you figured this out.

\[ 32^2 + 40^2 = \sqrt{1024 + 1600} = 2624 \]
\[ \sqrt{2624} \]
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Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? $\sqrt{42^2 - 32^2} = \sqrt{1740} = 27.7$

2. What is the area of the screen? $807 \times \text{square inches}$

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? Show how you figured this out

$51 \times \text{inches}$
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This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? 27.2 ins

Show how you know.

\[ h^2 = 42^2 - 32^2 \]
\[ h^2 = 1764 - 1024 \]
\[ h^2 = 740 \]

2. What is the area of the screen? 870.4 square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out.

\[ 32^2 + 40^2 = c^2 \]
\[ 1024 + 1600 = c^2 \]
\[ 2624 = c^2 \]
\[ c = 51.22 \]
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Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? \( \sqrt{27.2} \)

Show how you know.

\[
42^2 = 1764 \\
32^2 = 1024
\]

\[\sqrt{740}\]

2. What is the area of the screen? \(2187.54\) square inches

\[3.14 \times 16.16 \times 27.2 = 2187.54\]

\[A = 1108.91\]

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? Show how you figured this out

\[40^2 = 1600 \\
32^2 = 1024\]
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This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen?  
   Show how you know.

   \[ \sqrt{42^2 - 32^2} = 10 \]

   \[ 42^2 - 32^2 = 10 \]

2. What is the area of the screen?

   \[ 32 \times 10 = 320 \text{ square inches} \]

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? Show how you figured this out

   \[ 40 + 40 + 30 + 30 = 144 \text{ inches} \]
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Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? 

Show how you know.

\[ 32^2 + c = 42^2 \]

\[ 1024 + b = 1764 \]

2. What is the area of the screen?

300 square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out.

\[ 32^2 + 40^2 = c^2 \]

\[ 1024 + 1600 = c^2 \]

\[ \sqrt{2624} \] inches
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Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? 27.2

Show how you know.

\[ a^2 + b^2 = c^2 \]

\[ 32^2 + a^2 = 42^2 \]

\[ a^2 = 1704 - 1024 \]

\[ a = \sqrt{680} \]

(1)

2. What is the area of the screen? 1344 square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out

\[ 32^2 + 40^2 - \sqrt{2624} \]
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Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? \( \boxed{53 \text{ in}} \)

Show how you know.

\[
42^2 + 32^2 = c^2 \\
1764 + 1024 = c^2 \\
2788 = c^2 \\
c = \sqrt{2788} = 52.8 \text{ or } 53
\]

2. What is the area of the screen?

\( 32 \times 53 \) square inches \( \boxed{1694} \)

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out.

\[
32^2 + b^2 = 40^2 \\
1024 + b^2 = 1600 \\
-1024 \\
b = \sqrt{576} = 24
\]

\[1024 + 24^2 = 40^2 \checkmark\]

\[1024 + 576 = 1600 \checkmark \]
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Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? 27.2

Show how you know.

\[ 42^2 - 32^2 = 740 \]

2. What is the area of the screen? 870.4 square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out.

\[ 40^2 + 32^2 = 2624 \]
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This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? 24.20

Show how you know.

\[ a^2 + 32^2 = 42^2 \]
\[ a^2 + 1024 = 1764 \]
\[ a^2 = 740 \]
\[ \sqrt{740} \]

2. What is the area of the screen? 840.4 square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy?

Show how you figured this out

\[ b^2 + 32^2 = c^2 \]
\[ 1600 + 1024 = c^2 \]
\[ c = \sqrt{2624} = 51.22 \]