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.
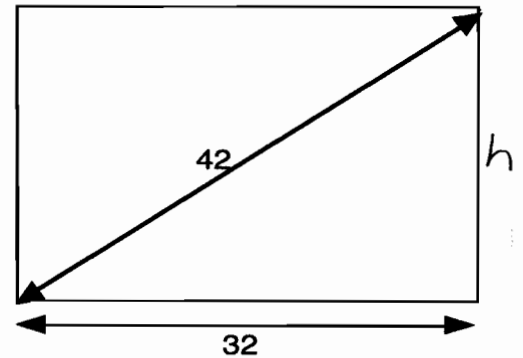This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen ?   _27.2_

   Show how you know.

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

2. What is the area of the screen?   _870.4_ square inches

   $$27.2 \cdot 32 = 870.4$$

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_ inches
   Show how you figured this out

   $$40^2 + 32^2 = S^2$$
   $$1600 + 1024 = 2624$$
   $$S = \sqrt{2624}$$
   $$= 51.2$$

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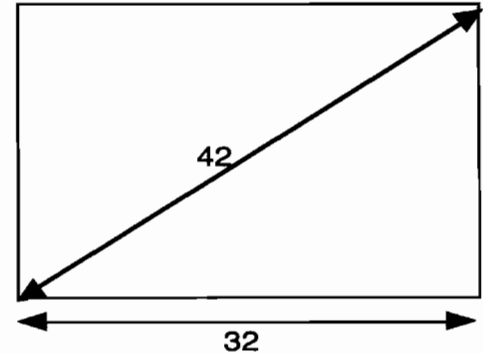
1. What is the height of the screen?   __27.2__

   Show how you know.

   $32^2 + 2^2 = 42^2$

   1024   1764
              −1024
   _____   _____
   $\sqrt{740} = 27.2$ 0740

   hypotenuse
   ↑
   [triangle drawing] legs

   [rectangle with diagonal labeled 42, base labeled 32]

2. What is the area of the screen?   __870.4__ square inches

   $32 \cdot 27.2 = 870.4$

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy?   __1280__ inches
   Show how you figured this out

   $\begin{array}{r} 40 \\ 32 \\ \hline 80 \\ 1200 \\ \hline 1280 \end{array}$

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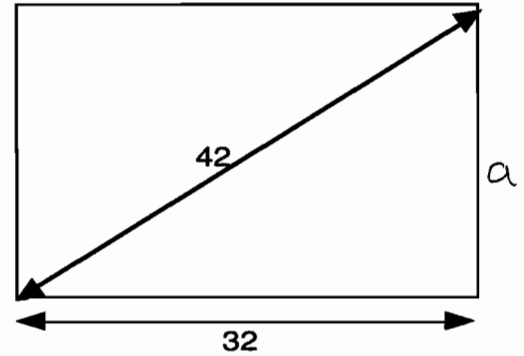
1. What is the height of the screen ?   **27.22**

   Show how you know.

   $$a^2 + b^2 = c^2$$
   $$32^2 + b^2 = 42^2$$
   $$42^2 - 32^2 = b^2$$
   $$1764 - 1024 = 740$$

   $\sqrt{740}$

   42 ... a ... 32

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

   $$32 \times \pi$$

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
   51

   32 / 40

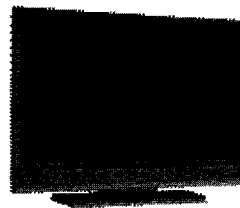 $$40^2 + 32^2 =$$
   $$1600 \quad 1024$$
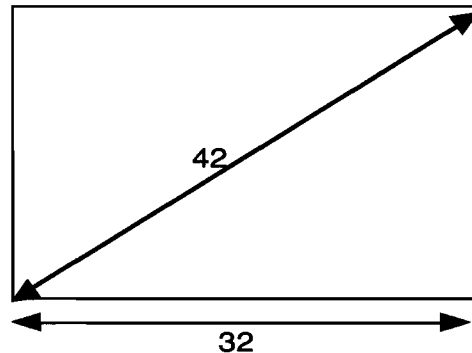 $$2624 \quad 51.2$$

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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.

   $$32^2 + b = 42^2$$
   $$1024 + b = 1764$$
   $$\sqrt{740}$$

   3.14

42

27.2

32

2. What is the area of the screen? 85.40 square inches

   3.14×27.20

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy? 12861.4 inches
   Show how you figured this out

   $3.14 (32^2) \times 4$
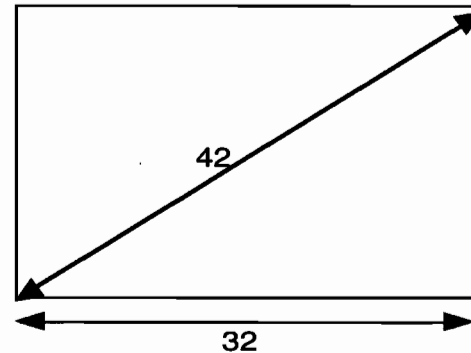
Jane's TV

Jane's T.V.

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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 ? __27.20__

   Show how you know.

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

   $b^2 = 27.20$

   $32^2 + b^2 = 42^2$

   $42^2 - 32^2 =$

2. What is the area of the screen? __1764__ square inches

   $42^2 = 1764$

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy? __2624__ inches
   Show how you figured this out

   $32^2 + 40^2 = c^2$

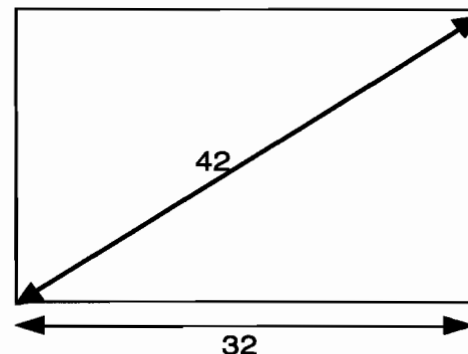 $c^2 = 2624$

   $c = 51.22$

   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 ? $\sqrt{740} = a$
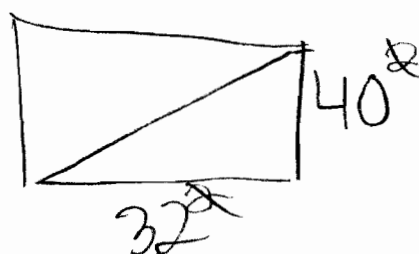
   Show how you know.

   I wrote the equation but I added a variable for the hieght. I did $32^2 + a^2 = 42^2$ the oppsite and came 740 with 740.

2. What is the area of the screen? $\underline{870.49}$ square inches

   $42^2 = a^2 + \sqrt{740}^2$

   $32 \times \sqrt{740}$

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? $\underline{51}$ inches
   Show how you figured this out

   $32^2 + 40^2 =$

   $1024 + 1600 = 2624$
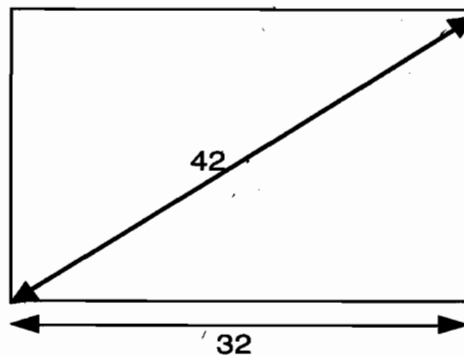
   $\sqrt{2624}$

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This problem gives you the chance to:
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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.

L

1. What is the height of the screen ? 27.2

   Show how you know.

   $42^2 - 32^2 = 740 \quad \sqrt{740} = 27.$ _

2. What is the area of the screen? 807 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 inches
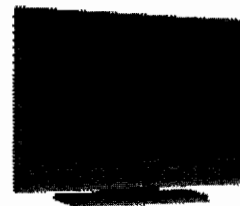   Show how you figured this out

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.
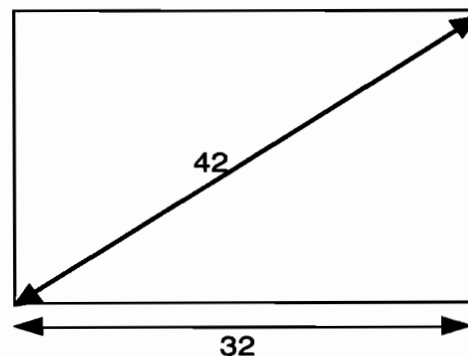This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

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

   Show how you know.

   $$\mathcal{R}^2 = 42^2 - 32^2$$
   $$= 740$$

2. What is the area of the screen? **870.4** square inches
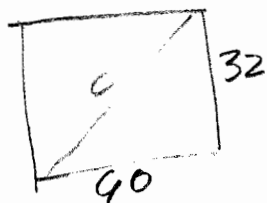
   $$32 \times 27.2$$

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy? **51** inches
   Show how you figured this out

   $$32^2 + 40^2 = c^2$$
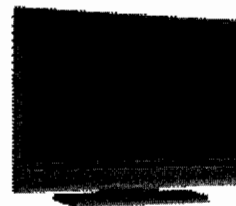 $$2629$$
   $$51.22$$

Jane's TV

Jane's T.V.

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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.

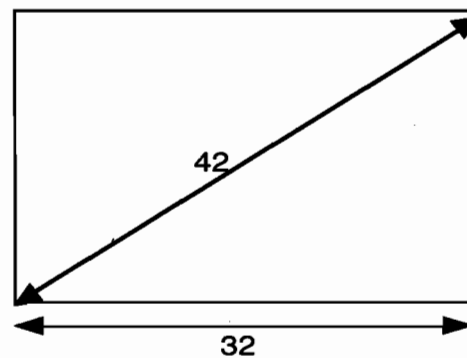This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen ?   _about 27.2_

   Show how you know.

   $42^2 = 1764$
   $32^2 = 1024$

   740

42

32

$\cancel{32}\cancel{27}$

2. What is the area of the screen?   _2187.54_ square inches

   $3 \cdot 14 \times 16 \cdot 16 \times 27.2 = 21875.54$
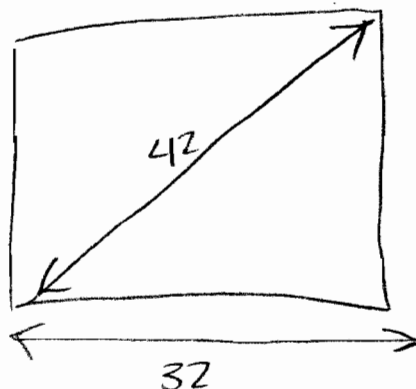 $A = \pi \cdot r \cdot r \cdot h$

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy?   _26.24_ inches
   Show how you figured this out

   $40^2 = 1600$
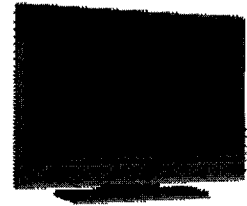 $32^2 = 1024$

42

32

Jane's TV

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Jane's T.V.

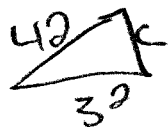This problem gives you the chance to:
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This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen? _____10 in._____

   Show how you know.

   $$42 \quad 3^2$$

   $$3^2 = 10$$

   $$c^2 - d^2 = b^2 \qquad 42 - 32 = 10$$

   $$42 - 32^2 = b^2$$

42 (diagonal), 32 (base)

2. What is the area of the screen?   _____320_____ square inches

   $$32 \times 10 = 320$$

3. Jane would like to have a screen 40 inches wide and 32 inches high.   _____144_____ inches
   About what size screen will she need to buy?
   Show how you figured this out

   $$32$$
   $$40$$

   $$40 + 40 + 38 + 32 = 144$$

Jane's T.V.

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• use Pythagoras' theorem

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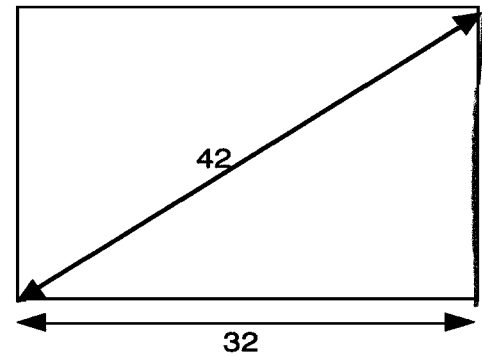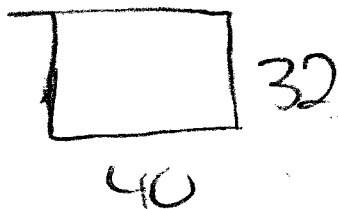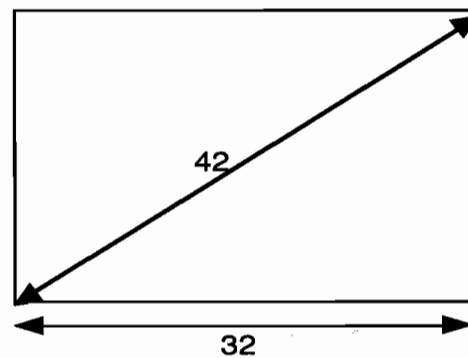
1. What is the height of the screen ? $b = \sqrt{740}$

   27.2

   Show how you know.

   $32^2 + C = 42^2$

   $1024 + b = 1764$

(diagram: rectangle with diagonal labeled 42, base labeled 32)

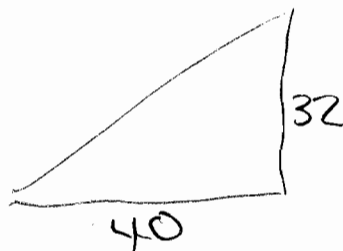2. What is the area of the screen?   _____3600_____ square inches

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy?   ___$\sqrt{2624}$___ inches
   Show how you figured this out

   (triangle with height labeled 32, base labeled 40)

   $32^2 + 40^2 = C^2$

   $1024 + 1600 = C^2$

Jane's TV

Jane's T.V.

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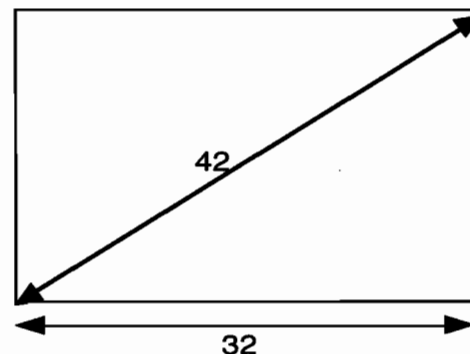
1. What is the height of the screen? $\underline{27.2}$

   Show how you know.

   $$a^2 + b^2 = c^2$$
   $$32^2 + a^2 = 42^2$$
   $$a^2 = 8704 - 1024$$
   $$a = \sqrt{704}$$

2. What is the area of the screen? $\underline{1344}$ square inches

   $$32 . 42 =$$

3. Jane would like to have a screen 40 inches wide and 32 inches high. About what size screen will she need to buy? $\underline{51}$ inches
   Show how you figured this out

   $$32^2 + 40^2 =$$
   $$\sqrt{2624}$$

Jane's T.V.

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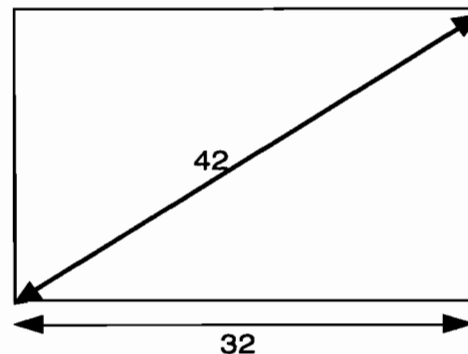This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen ?   <u>53 in</u>

   Show how you know.

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

2. What is the area of the screen?   <u>1696</u> square inches

$$32 \times 53$$

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy?   <u>24</u> inches
   Show how you figured this out

$$32^2 + b^2 = 40^2 \qquad 3^2 + 24^2 = 40^2 \checkmark$$
$$1024 + b^2 = 1600 \qquad 1024 + 576 = 1600 \checkmark$$
$$-1024 \qquad\qquad -1024$$
$$\qquad\qquad\qquad 576$$
$$b = 576 \qquad \sqrt{576} = 24$$

Jane's TV

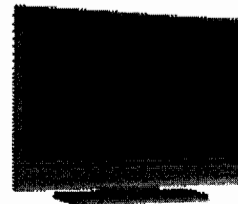## Jane's T.V.

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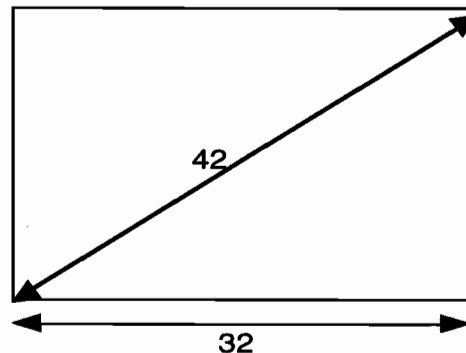This is because television screens are measured by their diagonal line.

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

   $$32 \cdot 27.2$$

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

   $$40^2 + 32^2 = 2624$$

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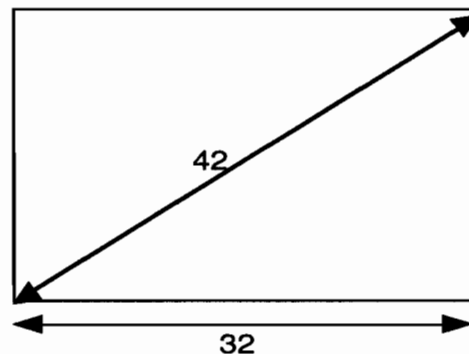This is because television screens are measured by their diagonal line.

This 42 inch screen measures 32 inches along the base.

1. What is the height of the screen ?   **27.20**

   Show how you know.

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

(diagram: rectangle with diagonal labeled 42, base labeled 32)

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

   $$27.20 \cdot 32$$

3. Jane would like to have a screen 40 inches wide and 32 inches high.
   About what size screen will she need to buy?   **51.22** inches
   Show how you figured this out   or 51

   $$40^2 + 32^2 = c^2 \qquad = 2624$$
   $$1600 + 1024 = c^2 \qquad \sqrt{2624} = 51.22$$

Jane's TV

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