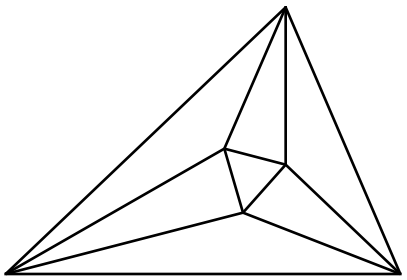
Meet 4 - Event A 2002-2003



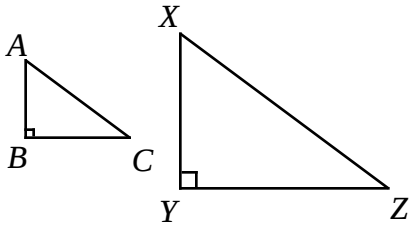
Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

_____1. Which of these values **IS** on the graph of $x > -1$?

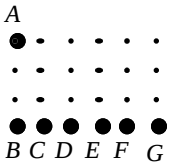
-2, -1, -1/2, -1 1/2, -4

_____%2. On Sunday, 36 out of 40 campsites were occupied. On Monday only 10 campsites were occupied. What was the percent decrease in occupied campsites, to the nearest tenth of a percent?

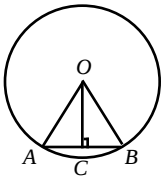
_____3. $\Delta ABC \sim \Delta XYZ$. If AB=3 cm, BC=4 cm, AC=5 cm, and XY=6 cm, find the length XZ.



_____4. On dot paper, A is exactly $3\sqrt{2}$ cm from which dot if the dots are 1 cm apart?



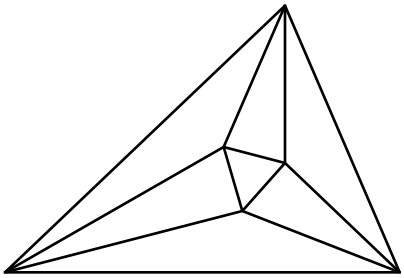
_____5. In circle O, the chord AB=14 cm and the distance from the center to the chord, OC, is 14 cm. What is the circle radius, to the nearest hundredth?



Name_____School_____

Meet 4 - Event A 2002-2003

Answers



Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

$-\frac{1}{2}$ 1.

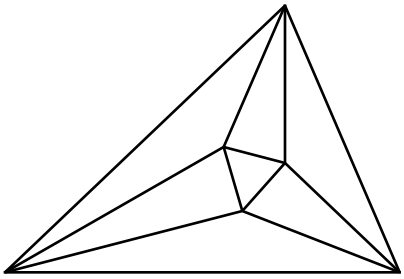
72.2% 2. 36-10=26 campsite decrease $\frac{26}{36}\times 100 = 72.22\%$

10 cm 3. $\frac{AB}{XY} = \frac{AC}{XZ}$, $\frac{3}{6} = \frac{5}{XZ}$, $XZ = \frac{6 \bullet 5}{3} = 10$ cm

E 4. $3\sqrt{2} = \sqrt{18} = \sqrt{9+9} = \sqrt{3^2+3^2}$ Since AB=3, we need BE=3 so E is the answer

15.65 cm 5. Since $OA = OB$, ΔOAB is isosceles, so AC=7
$OA^2 = 14^2 + 7^2 = 245$, $OA = 15.65$

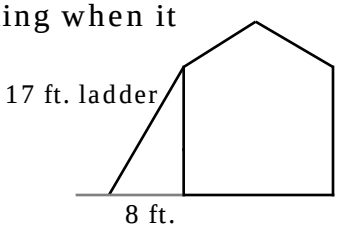
Meet 4 - Event B 2002-2003



Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

_____1. Simplify: $\sqrt{24}$

_____2. A 17 foot long ladder just reaches the roof of the building when it is 8 feet from the base of the building. How high is the wall of the building?



_____3. What is the surface area of a cube that is 5 inches on each edge?

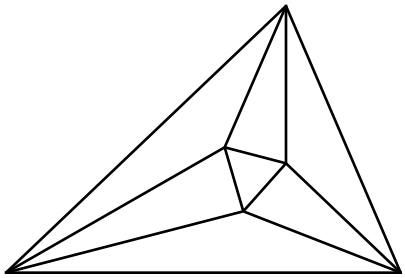
_____% 4. The value of Mia's stock portfolio fell 27% in the first 3 months of the year. By what percent must the value of her portfolio rise in the second 3 months for her to be back at her starting value, to the nearest percent?

_____5. When expanded as a decimal, $\frac{1}{97}$ has a 96 digit repetend. The last three digits are $A67$. What is A?

Name_____School_____

Meet 4 - Event B 2002-2003

Answers



Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

$2\sqrt{6}$ 1. $\sqrt{24} = \sqrt{2 \bullet 2 \bullet 2 \bullet 3} = 2\sqrt{6}$

15' 2. $17^2 - 8^2 = 225, \quad \sqrt{225} = 15$

$150\ in^2$ 3. $6 \times 5^2 = 150\ in^2$
or 150 sq. in.

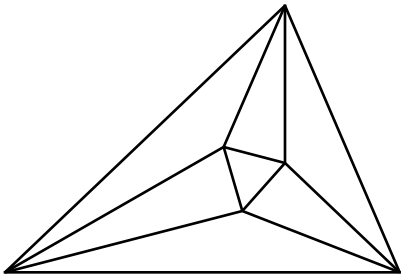
37% 4. $100 - 27 = 73, \quad \frac{27}{73} = 0.3698$

5 5.

$$
\begin{array}{r}
0.01\ldots\mathbf{K}567 \\
97\overline{)1.00\,\mathbf{K}\ldots000} \\
\underline{97} \\
30 \\
\underline{0} \\
550 \\
\underline{485} \\
650 \\
\underline{582} \\
680 \\
\underline{679} \\
1
\end{array}
$$

Work backwards from 1

Meet 4 - Event C 2002-2003

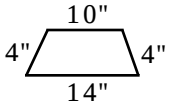


Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

_____1. If $a < b < 0$, then $\frac{1}{a}$? $\frac{1}{b}$

_____2. If $a < 0 < b$, then $\frac{1}{a}$? $\frac{1}{b}$

_____3. An isoceles trapezoid has bases of 10" and 14" and sides of 4". What is the exact area as a simplified radical?



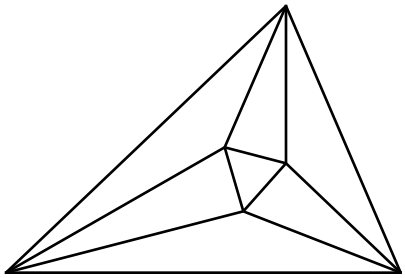
_____% 4. The value of Mia's stock portfolio fell 27% in the first 3 months of the year. By what percent must the value of her portfolio rise in the second 3 months for her to be back at her starting value, to the nearest percent?

_____5. When expanded as a decimal, $\frac{1}{97}$ has a 96 digit repetend. The last three digits at $A67$. What is A?

Name_____School_____

Meet 4 - Event C 2002-2003

Answers

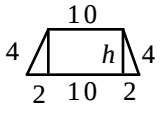


Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

___>___ 1. $\frac{1}{a} > \frac{1}{b}$ Example: $a = -4, b = -2, -\frac{1}{4} > -\frac{1}{2}$

___<___ 2. $\frac{1}{a} < \frac{1}{b}$ Example: $a = -4, b = 2, -\frac{1}{4} < \frac{1}{2}$

$24\sqrt{3}$ in^2 3. or $24\sqrt{3}$ sq. in.



$h = \sqrt{4^2 - 2^2} = \sqrt{12} = 2\sqrt{3}$

$A = \frac{1}{2}(10+14)2\sqrt{3} = 24\sqrt{3}$ in^2

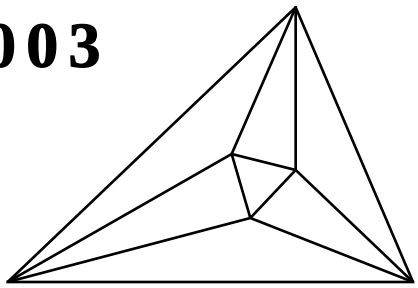
37% 4. $100 - 27 = 73, \quad \frac{27}{73} = 0.3698$

5 5.

$$
\begin{array}{r}
0.01\ldots \\
97\overline{)1.00\ldots000} \\
\underline{97} \\
30 \\
\underline{} \\
550 \\
\underline{485} \\
650 \\
\underline{582} \\
680 \\
\underline{679} \\
1
\end{array}
$$

Work backwards from 1

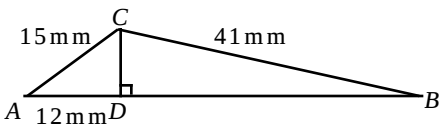
Meet 4 - Team Event 2002-2003



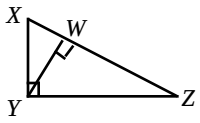
Questions are worth 4 points each.
Remember your units.

_____1. Find the area of the triangle with side lengths measuring 4.8 cm, 5.5 cm, and 7.3 cm.

_____2. Find the area of ΔABC if AC=15 mm, AD=12 mm, and BC=41 mm.



_____3. If ΔXYZ and ΔXYW are right triangles, XW=3", and YW=4", find the length of WZ.



_____4. Drew paid $52.38 for a lamp. If sales tax is 7%, what was the price of the lamp?

_____5. Simplify: $\sqrt{1980}$.

_____6. When expanded as a decimal, 3/97 has a 96 digit repetend. What is the last digit of the repetend?

_____7. Henry's wage of $12/hour was raised 20% in May, raised 10% in September, and raised 6% in April. What was his new wage in April?

_____8. ΔABC is similar to ΔDEF . Base AB=2 cm and base DE=8 cm. What is the ratio of the area of ΔABC to the area of ΔDEF ?

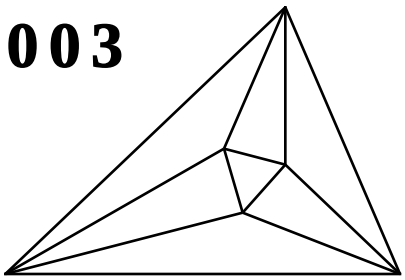
_____9. What is the distance from (-2, 4) to (4, 8) as a simplified radical?

_____10. What are the coordinates of a point half way from (-2, 4) to (4, 8)?

School_____

Meet 4 - Team Event 2002-2003

Answers



Questions are worth 4 points each.
Remember your units.

13.2cm^2 1. Is this a right triangle? $4.8^2 + 5.5^2 = 7.3^2$ Yes
The area is $\frac{1}{2}(4.8)(5.5) = 13.2\text{cm}^2$

$234\,\text{mm}^2$ 2. $CD = \sqrt{15^2 - 12^2} = \sqrt{81} = 9, \quad DB = \sqrt{41^2 - 9^2} = \sqrt{1600} = 40$
$A = \frac{1}{2}(12 + 40)(9) = 234\,\text{mm}^2$

$\frac{16"}{3}$ 3. All triangles are similar. $\frac{XW}{YW} = \frac{YW}{WZ}$, so $\frac{3}{4} = \frac{4}{WZ}, WZ = \frac{16"}{3}$
or $5\frac{1"}{3}$ or $5.\overline{3}"$

$\$48.95$ 4. $1.07x = \$52.38, \quad x = \frac{52.38}{1.07} = 48.953$

$6\sqrt{55}$ 5. $\sqrt{4 \bullet 5 \bullet 9 \bullet 11} = 2 \bullet 3\sqrt{5 \bullet 11} = 6\sqrt{55}$

1 6. $\frac{100}{-97} = 97 \times 1$
3

$\$16.79$ 7. $12 \times 1.2 = 14.40, 14.40 \times 1.1 = 15.84, 15.84 \times 1.06 = 16.79$

1 to 16 8. All lengths in ΔDEF are 4 times longer, so the area is $4^2 = 16$ times
or 1/16 or 1:16 larger

$2\sqrt{13}$ 9. $4 - {}^-2 = 6, 8 - 4 = 4, \sqrt{6^2 + 4^2} = \sqrt{52} = 2\sqrt{13}$

(1, 6) 10. $x = \frac{{}^-2 + 4}{2} = \frac{2}{2} = 1, \quad y = \frac{4 + 8}{2} = \frac{12}{2} = 6$