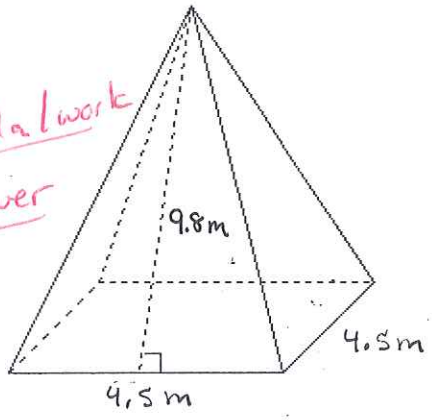
Name:_____ Class:_____ Date: Key

Chapter 1 Free Response Practice Test 2

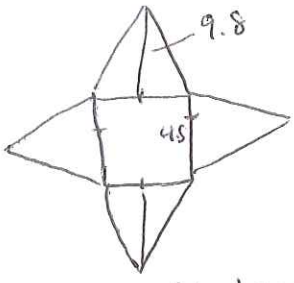
Find the surface area of the solid.

1.



3pts
1pt formula/work
1pt answer
1pt square meters

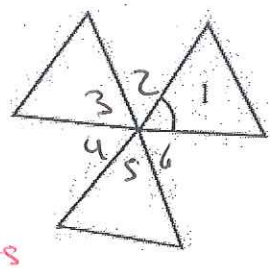
net Looks like



SA = 1 square + 4 triangles
$= 1 \cdot side^2 + 4\left(\frac{1}{2} \cdot base \cdot height\right)$
$= (4.5)^2 + 4\left(\frac{1}{2} \cdot 4.5 \cdot 9.8\right)$
$= 20.25 + 88.2$
$= \boxed{108.45\ m^2}$

Pattern blocks can be arranged to fit in a circular pattern without leaving spaces. Remember that the measurement around a full circle is 360°.

2. Find the degree measure of one fourth of the numbered angle shown below. All angle measures are congruent.



3pts
1pt find mc1
1pt find $\frac{1}{4}$ of mc1 - answer
1pt write degrees

- To find the measure of angle One

$\frac{360^\circ \text{ in circle}}{6 \text{ angles in circle}} = 60^\circ$ each angle

- We want one fourth of 60°

$\frac{1}{4} \times \frac{60^{15}}{1} = 15^\circ$

Answer

$m\angle 1 = 15^\circ$

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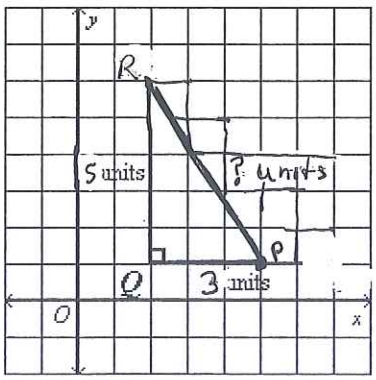
Chapter 1 Free Response Practice Test 2

3. Explain how you can find the distance between two points without a ruler.
Include **(1)** how to use the Pythagorean Theorem and **(2)** the Distance Formula to find the distance between two points, and the length of $\overline{PR}$ from the figure given below.
Find the distance using both methods.

4 pts

Pyth thm method
2 pts
- work
- answer

Distance formula
2 pts
- work
- answer



R (2, 6)
P (5, 1)

Pythagorean thm

$a^2 + b^2 = c^2$
$3^2 + 5^2 = c^2$
$9 + 25 = c^2$
$34 = c^2$
$\sqrt{34} = c$

Distance formula

$d = \sqrt{(5-2)^2 + (1-6)^2}$
$d = \sqrt{3^2 + 5^2}$
$d = \sqrt{9+25}$
$d = \sqrt{34}$

4. The coordinates of **midpoint *M*** and endpoint *C* of a segment are M(4, 6) and C(-2, 2) **Find the coordinates of the other endpoint.**

Apply formula

endpts (-2, 2) (x, y)
midpt (4, 6)

3 pts – work to find x
work to find y
answer as ordered pair

(2) $\frac{-2+x}{2} = 4$ (2)
$-2 + x = 8$
$+2 \quad +2$
$x = 10$

(2) $\frac{2+y}{2} = 6$ (2)
$2 + y = 12$
$-2 \quad -2$
$y = 10$

Answer
Other endpt is (10, 10)

Like #4

5. **BONUS QUESTION** The longitude-latitude coordinates of Worland, Wyoming are (42.2°N, 103.36°W) and of Portland, Maine are (41.19°N, 71.18°W). If **Worland is one endpoint** of a segment and **Portland is its midpoint, find the latitude and longitude of the other endpoint.**

3 bonus pts
work to find x
work to find y
answer as ordered pair with direction & degrees!

endpoints (42.2, 103.36) (x, y)
midpoint (41.19, 71.18)

(2) $\frac{42.2+x}{2} = 41.19$ (2)
$42.2 + x = 82.38$
$-42.2 \quad -42.20$
$x = 40.18$

(2) $\frac{103.36+y}{2} = 71.18$ (2)
$103.36 + y = 142.36$
$-103.36 \quad -103.36$
$y = 39$

Answer:
Other endpt is (40.18°N, 39°W)