$3^{rd}$ Quarter Exam – Geometry – Easy Peasy All-in-One High School

Section 7.2

#24

$QUAD \sim KENT$ Find the perimeter of $QUAD$.

\[ \begin{array}{c}
K & 21 \\
Q & \\
D & 5 \\
U & \\
T & 10 \\
N & A \\
E & \\
\end{array} \]

answer: 31

#25 (2 points)

\[ \begin{array}{c}
A & 10 \\
C & 5 \\
D & \\
E & \\
T & x \\
O & 14 \\
G & 28 \\
\end{array} \]

answer: $x=20$, $y=7$

\[ \triangle CAT \sim \triangle DOG \] Solve for $x$ and $y$.

Section 7.5

#11

\[ \frac{AB}{DE} \]

Use the given lengths to determine if $AB \parallel DE$.

\[ \begin{array}{c}
A & 8 \\
B & 6 \\
D & 16 \\
C & 12 \\
\end{array} \]
Find the value of the missing variable(s).

\[ \text{answer: } x = 9 \]

Section 7.6

#1 (2 points)

Given \( A \) and the scale factor, determine the coordinates of the dilated point, \( A' \). You may assume the center of dilation is the origin.

1. \( A(3, 9), k = \frac{2}{3} \)

Section 8.2

#22 (10 points)

Fill in the blanks for the proof.

Given: In \( \triangle ABC, a^2 + b^2 < c^2 \), where \( c \) is the longest side. In \( \triangle LMN, \angle N \) is a right angle.

Prove: \( \triangle ABC \) is an obtuse triangle.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( \triangle ABC, a^2 + b^2 &lt; c^2 ), and ( c ) is the longest side. ( \triangle LMN, \angle N ) is a right angle.</td>
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<td>Reason</td>
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<td>2. (a^2 + b^2 = h^2)</td>
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<tr>
<td>3. (c^2 &gt; h^2)</td>
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<td>4.</td>
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<td>5. (\angle C) is the largest angle in (\triangle ABC).</td>
<td>Transitive PoE</td>
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<tr>
<td>6. (m\angle N = 90^\circ)</td>
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<tr>
<td>7. (m\angle C &gt; m\angle N)</td>
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<tr>
<td>8.</td>
<td></td>
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<tr>
<td>9. (\angle C) is an obtuse angle.</td>
<td></td>
</tr>
<tr>
<td>10. (\triangle ABC) is an obtuse triangle.</td>
<td></td>
</tr>
</tbody>
</table>

**Section 8.4**

1. In an isosceles right triangle, if a leg is \(x\), then the hypotenuse is \(\text{__________}\).
2. In a 30-60-90 triangle, if the shorter leg is \(x\), then the longer leg is \(\text{__________}\) and the hypotenuse is \(\text{__________}\).
3. A square has sides of length 15. What is the length of the diagonal?
4. A square’s diagonal is 22. What is the length of each side?
5. A rectangle has sides of length 4 and \(4\sqrt{3}\). What is the length of the diagonal?
6. A baseball diamond is a square with 90 foot sides. What is the distance from home base to second base? (HINT: It’s the length of the diagonal).
Section 8.5

#14 (3 points)

Find the sine, cosine and tangent of \( \angle A \). Reduce all fractions and radicals.

\[ \begin{align*}
A & \quad 20 \\
B & \quad 16 \\
C & \quad 12 \\
\end{align*} \]

Section 8.6

#17

A 75 foot building casts an 82 foot shadow. What is the angle that the sun hits the building?

answer: 47.6 degrees

Section 9.1

Determine which term best describes each of the following parts of \( \odot P \).

1. \( \overline{KG} \)
2. \( \overrightarrow{FH} \)
3. $KH$
4. $E$
5. $BK$
6. $CF$
7. $A$
8. $JG$
9. What is the longest chord in any circle?

Section 9.5

#31 (12 points)

**Given:** Intersecting chords $AC$ and $BD$

**Prove:**

$m \angle a = \frac{1}{2} \left(m \widehat{DC} + m \widehat{AB}\right)$

**HINT:** Draw $BC$ and use inscribed angles.

Total: 48 points