Use the drawing above to answer problems 1 – 6

1. Write the theorem that proves $\angle A = \angle D$.

____________________________________________________________________

2. Write the theorem that proves $\angle D$ is supplementary to $\angle F$.

____________________________________________________________________

3. If $\angle E = 40^\circ$, then $\angle C =$

4. If $\angle B = 120^\circ$, then $\angle A =$ and $\angle C =$

5. If $\angle B = 117^\circ$, then $\angle G =$

6. Name all the angles, in the picture above, that are equal to $\angle H$.

____________________________________________________________________
Supplemental Worksheet
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Use the picture below to answer questions 7 – 10.

7. Which two lines are perpendicular? __________
8. Name an angle that is supplement to \( \angle ABC \). __________
9. What is the measure of \( \angle AD? \) ________
10. If \( \angle CBD = 48^\circ \), then \( \angle ABC = \) _____°

Fill in the blank to complete the theorem properly.

11. If two angles are __________ and congruent, then they both measure 45°.
12. If two angles are __________ and congruent, then they both measure 90°.
13. If the exterior sides of two __________ angles form a right angle, then those angles are ____________.
14. If the ________ sides of two __________ angles form a ____________________, then those angles are supplementary.

Use the pictures to answer the following questions.

15. \( x = \) ____
You are given a square piece of paper.

If you fold it in half, diagonally, it will leave a crease here.

16. What is the measure of angle A?______

17. A truck is driving up a hill, like the one drawn below. What is most likely the measurement of this angle?
   A. 80°  B. 15°  C. 63°

18. $\angle X = \underline{\hspace{2cm}}$.
   $\angle Y = \underline{\hspace{2cm}}$.
   $\angle Z = \underline{\hspace{2cm}}$. 
19. In the picture to the right, $x = \underline{\phantom{0000}}^\circ$

20. Solve for $x$ in the Isosceles triangle.
Use the drawing above to answer problems 1 – 6

1. Write the theorem that proves $\angle A = \angle D$.

   **Opposite or vertical angles are equal.**

2. Write the theorem that proves $\angle D$ is supplementary to $\angle F$.

   **If two lines are parallel, then the interior angles on the same side of the transversal are supplementary.**

3. If $\angle E = 40^\circ$, then $\angle C = 140^\circ$

4. If $\angle B = 120^\circ$, then $\angle A = 60^\circ$ and $\angle C = 120^\circ$

5. If $\angle B = 117^\circ$, then $\angle G = 117^\circ$

6. Name all the angles, in the picture above, that are equal to $\angle H$.

   $\angle E, \angle D$ and $\angle A$
7. Which two lines are perpendicular?  **Line BE and BD**
8. Name an angle that is supplement to \(\angle ABC\).  \(\angle CBD\)
9. What is the measure of \(\angle AD\)?  \(180^\circ\)
10. If \(\angle CBD = 48^\circ\), then \(\angle ABC = 132^\circ\)

Fill in the blank to complete the theorem properly.

11. If two angles are **complementary** and congruent, then they both measure \(45^\circ\).
12. If two angles are **supplementary** and congruent, then they both measure \(90^\circ\).
13. If the exterior sides of two **adjacent** angles form a right angle, then those angles are **complementary**.
14. If the **exterior** sides of two **adjacent** angles form a **straight line**, then those angles are supplementary.

Use the pictures to answer the following questions.

15. \(x = 140^\circ\)
You are given a square piece of paper.

If you fold it in half, diagonally, it will leave a crease here.

16. What is the measure of angle A? 45°.

17. A truck is driving up a hill, like the one drawn below. What is most likely the measurement of this angle?
   
   A. 80°  
   B. 15°  
   C. 63°

18. \( \angle X = 70° \)  
   \( \angle Y = 110° \)  
   \( \angle Z = 110° \)
19. In the picture to the right, $x = 77^\circ$

20. Solve for $x$ in the Isosceles triangle.

\[
3x + 3^2 - 3 = 4x - 18 \\
3x + 9 - 3 = 4x - 18 \\
9 - 3 = 4x - 3x - 18 \\
6 = x - 18 \\
6 + 18 = x \\
24 = x
\]