1. Given: ΔATV ≅ ΔQRP

What is the value of $x$?

$x =$
2.

Directions: Write the coordinates of your ordered pair in the box provided. Make sure to include a comma between your x and y coordinates.

The vertices of $\triangle ABC$ and the endpoints of $DE$ have integral coordinates. Plot point F with integral coordinates so that $\triangle ABC \cong \triangle DEF$.

Coordinates of F: (__, __)
3. \( \triangle ABC \sim \triangle DEF \)

Solve for \( x \).

\[ x = \]

Find the length of \( FD \).

\[ FD = \]
4. In the diagram below, what is the value of $x$?

\[ \begin{align*}
30 & \quad 20 \\
\quad x & \quad 5
\end{align*} \]

a) 6  

b) 7.5

c) 10  

d) 4

5. Which condition proves $\triangle DFG \sim \triangle HJK$?

\[ \begin{align*}
a) \frac{HJ}{DF} & = \frac{FG}{JK} \\
b) \frac{DG}{HK} & = \frac{FG}{JK} \\
c) \frac{DF}{HJ} & = \frac{DG}{HK} \\
d) \frac{FG}{JK} & = \frac{HK}{DG}
\end{align*} \]
6. Which of the following sets of lengths could represent a right triangle?

a) 3 in, 5 in, 2 in
b) 4 ft, 6 ft, 7 ft
c) 6 cm, 9 cm, 10 cm
d) 8 ft, 15 ft, 17 ft

7. If a tree casts an 8-meter shadow, and the angle from the ground to the tree is 30°, what is the approximate height of the tree?

A 4.6 m  C 13.7 m
B 6.3 m  D 16 m
8.

The floor and walls of Gerald’s attic form an equilateral triangle.

What is the approximate height $h$ of the attic?

A  6.0 ft
B  10.4 ft
C  12.0 ft
D  20.5 ft

9. What is the value of $x$?

\[ \frac{13}{11.5} = \tan(x) \]

a) $62.2^\circ$

b) $27.8^\circ$

c) $41.5^\circ$

d) $48.5^\circ$
10. Given: Rhombus $ABCD$  
$AB = 6x + 1$  and  $BC = 8x - 43$

What is the perimeter of rhombus $ABCD$?
A. 22  
B. 166  
C. 133  
D. 532

11. $ABCD$ is a parallelogram.

$m\angle D = \underline{\phantom{0000}}$°
12. What is the measure of one interior angle of a regular polygon with 36 sides?
   a) 170°  b) 6120°  c) 180°  d) 10°

13. Part of a regular polygon has been covered up. Which polygon is represented?
   a) pentagon  b) octagon  c) decagon  d) dodecagon
14. In the heptagon shown, what is $m\angle DEF$?

$m\angle DEF =$