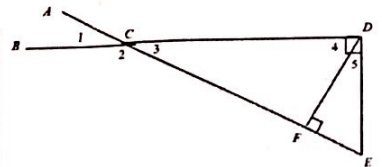


Name: Answer Key
 Honors Geometry

Directions: For #1-4, use the diagram.



1. Name two pairs of numbered angles that are supplementary. <u>$\angle 2$ and $\angle 3$; $\angle 1$ and $\angle 2$</u>	2. Name two pairs of numbered angles that are complementary. <u>$\angle 4$ and $\angle 5$</u>
3. Name a pair of numbered angles that are vertical. <u>$\angle 1$ and $\angle 3$</u>	4. How many angles have their vertex at D? <u>3 angles</u>

5. Find the value of x. $180 - 132 = 48$ $\frac{48}{2} = 24$ <u>$x = 24^\circ$</u>	6. Find the value of x. <u>$x = 100^\circ$</u>
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7. The measure of the supplement of an angle exceeds three times the measure of the complement of the angle by 12. Find the measure of half of the supplement.

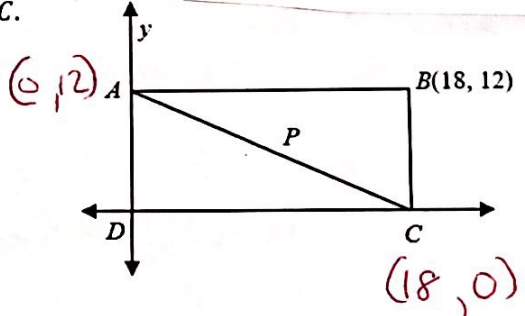
$x = \text{angle}$
 $180 - x = \text{supp}$
 $90 - x = \text{comp}$

$\text{Supplement} = 3(\text{comp}) + 12$
 $180 - x = 3(90 - x) + 12$
 $180 - x = 270 - 3x + 12$
 $180 - x = 282 - 3x$
 $-102 = -2x$
 $x = 51^\circ$

$\text{Supplement} = 180 - 51 = 129$
half supp = 64.5°

8. ABCD is a rectangle. Find the coordinates of P, the midpoint of AC.

$\left(\frac{0+18}{2}, \frac{12+0}{2} \right)$
 $(9, 6)$



9. $\angle A$ is complementary to $\angle B$, $\angle B$ is supplementary to $\angle C$, and the ratio of $m\angle A$ to $m\angle C$ is 11:26. Find $m\angle B$.

$\frac{m\angle A}{m\angle C} = \frac{11}{26} = \frac{90-x}{180-x}$

$11(180-x) = 26(90-x)$
 $1980 - 11x = 2340 - 26x$
 $-1980 + 26x = -1980 + 26x$

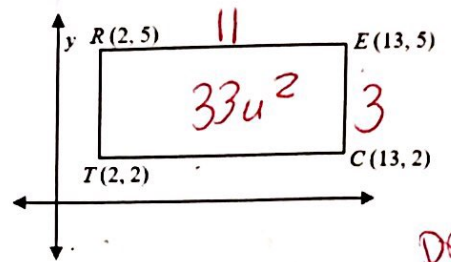
$15x = 360$
 $x = 24$
 $m\angle B = 24^\circ$

10. Find the supplement of 45° .

$180 - 45 = 135^\circ$
 135°

11. Find the area of RECT.

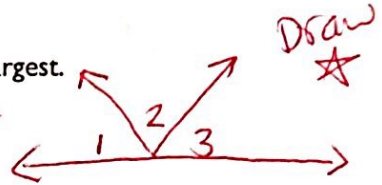
Area = $33u^2$



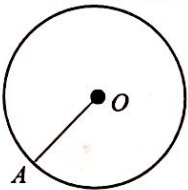
12. The ratio of $m\angle 1 : m\angle 2 : m\angle 3$ is 4:9:5. Of the three angles, find the measure of the largest.

$4x + 9x + 5x = 180$
 $18x = 180$
 $x = 10$

$m\angle 1 = 40^\circ$
 $m\angle 2 = 90^\circ$ (largest)
 $m\angle 3 = 50^\circ$



13. $OA = 5.6$. To the nearest tenth, find the area of Circle O.



$A = \pi r^2$
 $A = \pi (5.6)^2$
 $A \approx 98.5u^2$

14. The area of a circle is $64\pi ft^2$. What is the circumference of the circle?

$A = \pi r^2$
 $64\pi = \pi r^2$
 $\frac{64\pi}{\pi} = \frac{\pi r^2}{\pi}$
 $64 = r^2$
 $8 = r$

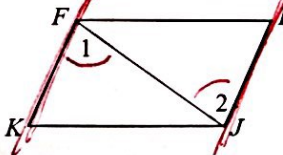
$C = 2\pi r$
 $C = 2\pi(8)$
 $C = 16\pi \text{ units}$

15. The slope of a line is $-\frac{5}{3}$. The line contains the point $(-8, 10)$ and a point whose x coordinate is 7. Find the y-coordinate of that point.

$y - 10 = -\frac{5}{3}(x + 8)$
 $y - 10 = -\frac{5}{3}x - \frac{40}{3}$
 $+10 \qquad +30/3$

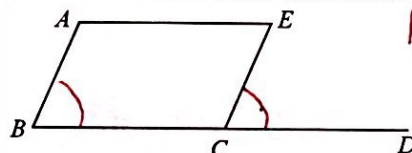
$y = -\frac{5}{3}x - \frac{10}{3}$ * Now put in x-value
 $y = -\frac{5}{3}(7) - \frac{10}{3}$
 $y = -\frac{35}{3} - \frac{10}{3} = -\frac{45}{3} = -15$

16. For which two lines are $\angle 1$ and $\angle 2$ a pair of alternate interior angles?



\overline{FK} and \overline{HJ}

17. If $\angle ABC$ and $\angle ECD$ are corresponding angles, which line is the transversal?



line seg \overline{BD}

18. True or False: If P is on line j, Q is on line k, and PQ is perpendicular to both j and k, then $j \parallel k$.



TRUE

19. One side of a rectangle is 18 and the perimeter is 48. What is the area?

$6 = x$
 $P = 48$
 $x = 6$

$2x + 36 = 48$
 $2x = 12$
 $x = 6$

$A = 6(18)$
 $A = 108u^2$

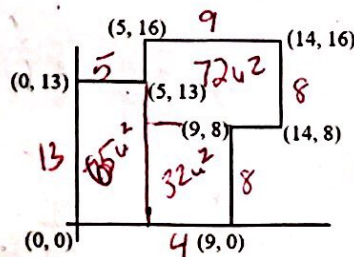
20. Find the angle formed by the hands of a clock at 1:45.



Each section 30°

90
 30
 2
 22.5

21. A floor plan of a house is given below. What is the area of the floor if each unit is one foot?



Area = $65 + 72 + 32$
 $= 169u^2$

$90 + 30 + 22.5$
 142.5°