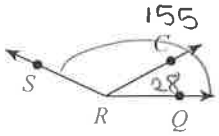
Geometry Name Key

Review for PC #2 WS

1) $m\angle CRQ = 28°$ and $m\angle SRQ = 155°$. Find $m\angle SRC$.

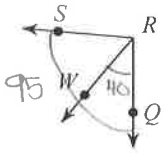


$28 + x = 155$

$x = 127$

$\boxed{m\angle SRC = 127°}$

2) $m\angle QRS = 95°$ and $m\angle QRW = 40°$. Find $m\angle WRS$.

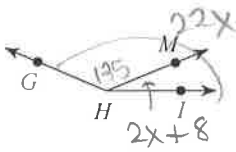


$95 = 40 + x$

$55 = x$

$\boxed{m\angle WRS = 55°}$

3) Find x if $m\angle GHI = 22x + 3$, $m\angle GHM = 135°$, and $m\angle MHI = 2x + 8$.



$2x+8+135 = 22x+3$

$2x+143 = 22x+3$

$-2x \qquad -2x$

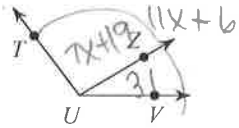
$143 = 20x+3$

$-3 \qquad -3$

$\frac{140}{20} = \frac{20x}{20}$

$\boxed{x = 7}$

4) $m\angle TUZ = 7x + 19$, $m\angle ZUV = 31°$, and $m\angle TUV = 11x + 6$. Find x.



$7x+19+31 = 11x+6$

$7x+50 = 11x+6$

$-7x \qquad -7x$

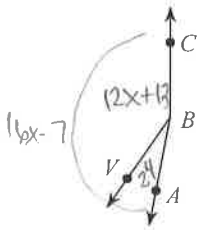
$50 = 4x+6$

$-6 \qquad -6$

$\frac{44}{4} = \frac{4x}{4}$

$\boxed{x = 11}$

5) Find x if $m\angle ABV = 24°$, $m\angle VBC = 12x + 13$, and $m\angle ABC = 16x - 7$.



$12x+13+24 = 16x-7$

$12x+37 = 16x-7$

$-12x \qquad -12x$

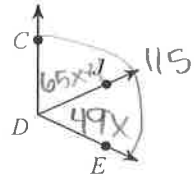
$37 = 4x-7$

$+7 \qquad +7$

$\frac{44}{4} = \frac{4x}{4}$

$\boxed{x = 11}$

6) Find $m\angle CDJ$ if $m\angle JDE = 49x$, $m\angle CDE = 115°$, and $m\angle CDJ = 65x + 1$.



$65x+1+49x = 115$

$114x+1 = 115$

$-1 \qquad -1$

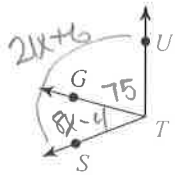
$114x = 114$

$x = 1$

$65(1)+1 = 66$

$\boxed{m\angle CDJ = 66°}$

7) Find $m\angle STU$ if $m\angle GTU = 75°$, $m\angle STG = 8x - 4$, and $m\angle STU = 21x + 6$.



$8x-4+75 = 21x+6$

$8x+71 = 21x+6$

$-8x \qquad -8x$

$71 = 13x+6$

$-6 \qquad -6$

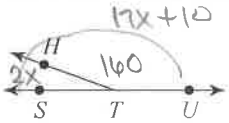
$\frac{65}{13} = \frac{13x}{13}$

$x = 5$

$21(5)+6$

$\boxed{m\angle STU = 111°}$

8) Find $m\angle STH$ if $m\angle HTU = 160°$, $m\angle STH = 2x$, and $m\angle STU = 17x + 10$.



$2x+160 = 17x+10$

$-2x \qquad -2x$

$160 = 15x+10$

$-10 \qquad -10$

$\frac{150}{15} = \frac{15x}{15}$

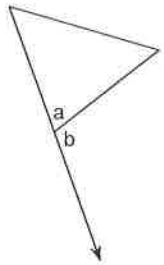
$x = 10$

$2(10) = 20$

$\boxed{m\angle STH = 20°}$

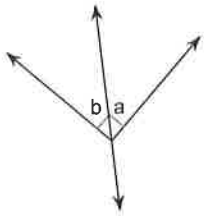
Name the relationship: complementary, linear pair, vertical, or adjacent.

9)



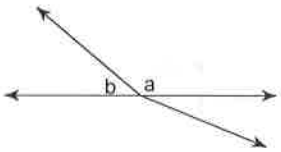
linear pair
adjacent

10)



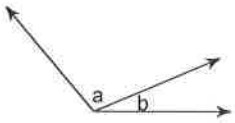
complementary
adjacent

11)



linear pair
adjacent

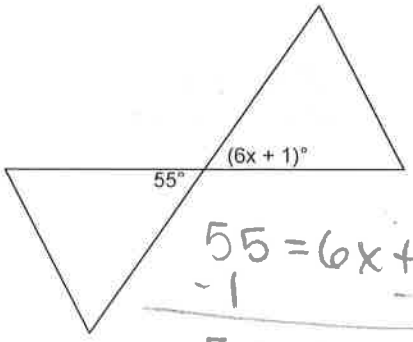
12)



adjacent

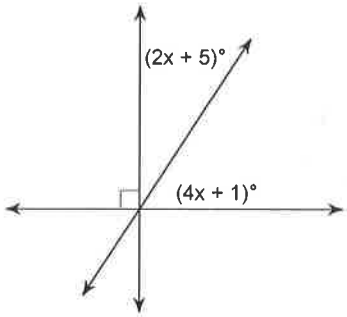
Find the value of x.

13)



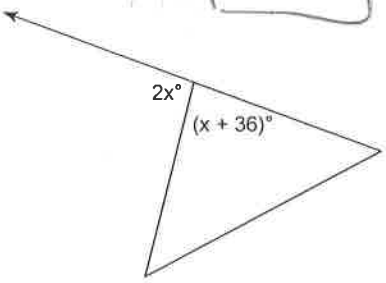
$55 = 6x + 1$
$-1 \quad -1$
$\frac{54}{6} = \frac{6x}{6}$
$\boxed{x = 9}$

14)



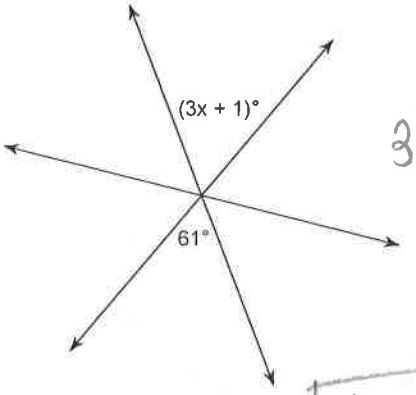
$2x + 5 + 4x + 1 = 90$
$6x + 6 = 90$
$-6 \quad -6$
$\frac{6x}{6} = \frac{84}{6}$
$\boxed{x = 14}$

15)



$2x + x + 36 = 180$
$3x + 36 = 180$
$-36 \quad -36$
$\frac{3x}{3} = \frac{144}{3}$
$\boxed{x = 48}$

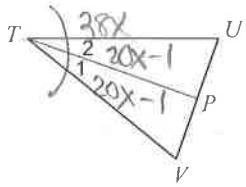
16)



$3x + 1 = 61$
$-1 \quad -1$
$\frac{3x}{3} = \frac{60}{3}$
$\boxed{x = 20}$

Each figure shows a triangle with one of its angle bisectors.

17) Find x if $m\angle 1 = 20x - 1$ and $m\angle VTU = 38x$.



$20x - 1 + 20x - 1 = 38x$

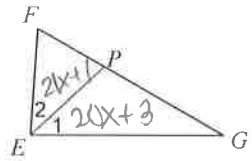
$40x - 2 = 38x$

$-40x \quad -40x$

$-2 = -2x$

$\boxed{x = 1}$

18) $m\angle 2 = 21x + 1$ and $m\angle 1 = 20x + 3$. Find x.



$21x + 1 = 20x + 3$

$-20x \quad -20x$

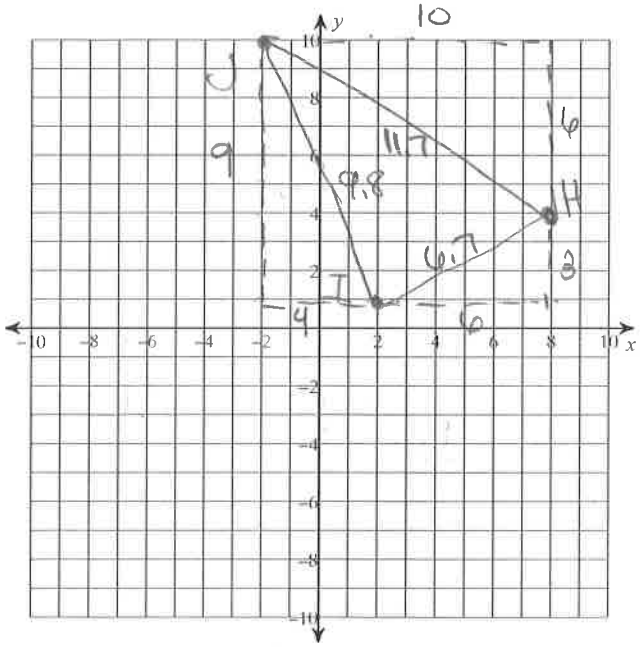
$x + 1 = 3$

$-1 \quad -1$

$\boxed{x = 2}$

Plot each point. Find the area and perimeter of each. Round to the nearest tenth.

19) $H(8, 4)$ $I(2, 2)$ $J(-2, 10)$



JH

$10^2 + 6^2 = c^2$

$100 + 36 = c^2$

$\sqrt{136} = \sqrt{c^2}$

$11.7 = c$

IH

$3^2 + 6^2 = c^2$

$9 + 36 = c^2$

$\sqrt{45} = \sqrt{c^2}$

$6.7 = c$

JI

$9^2 + 4^2 = c^2$

$81 + 16 = c^2$

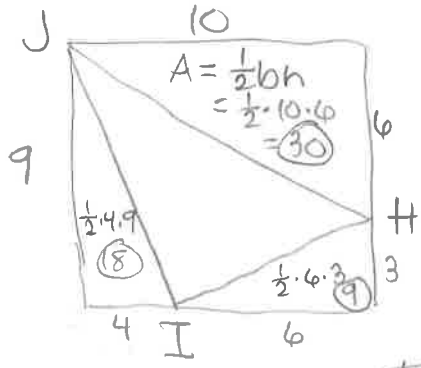
$\sqrt{97} = \sqrt{c^2}$

$9.8 = c$

Perimeter ΔHIJ

$11.7 + 6.7 + 9.8$

$\boxed{28.2 \text{ units}}$

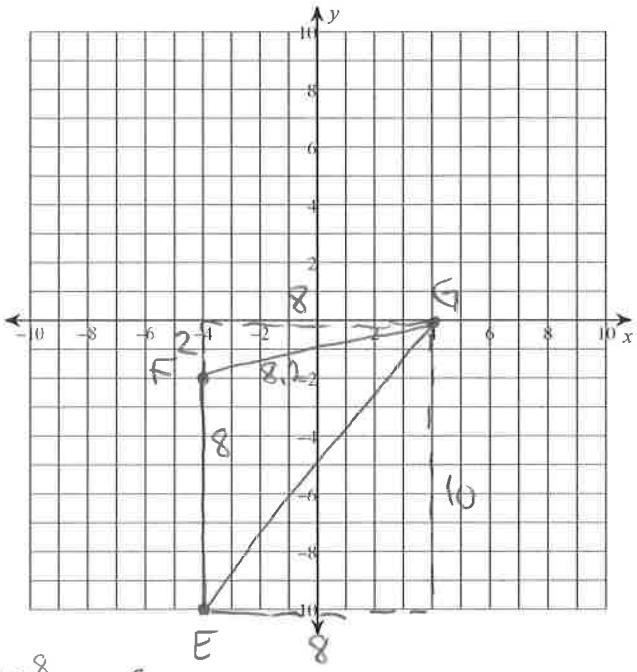


$9 \times 10 = 90$

$90 - 30 - 18 - 9$

$\boxed{\text{Area } \Delta HIJ = 33 \text{ units}^2}$

20) $E(-4, -10)$ $F(-4, -2)$ $G(4, 0)$



EF = 8

FG

$2^2+8^2=c^2$

$4+64=c^2$

$\sqrt{68}=\sqrt{c^2}$

$8.2=c$

EG

$8^2+10^2=c^2$

$64+100=c^2$

$\sqrt{164}=\sqrt{c^2}$

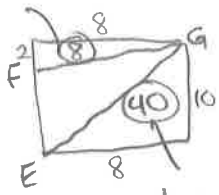
$12.8=c$

Perimeter ΔEFG

$8+8.2+12.8$

$\boxed{29 \text{ units}}$

$\frac{1}{2}\cdot 2\cdot 8$



$\frac{1}{2}\cdot 8\cdot 10$

Area ΔEFG

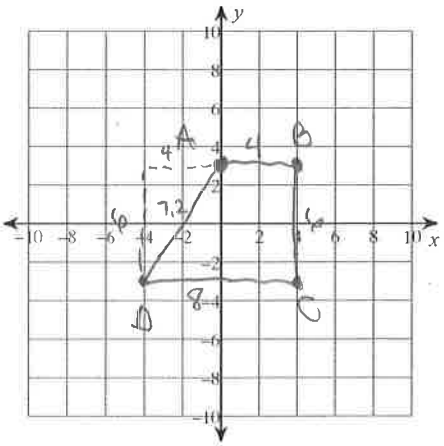
$\square = 8\cdot 10 = 80$

$80-40-8=32$

$\boxed{\text{Area } \Delta EFG = 32 \text{ units}^2}$

Plot the points. Then find the area and perimeter of each figure. Round to the nearest tenth.

21) A(0, 3), B(4, 3), C(4, -3), and D(-4, -3)



AD

$6^2+4^2=c^2$

$36+16=c^2$

$\sqrt{52}=\sqrt{c^2}$

$7.2=c$

Perimeter ABCD

$4+6+8+7.2=$

$\boxed{25.2 \text{ units}}$

Area ABCD

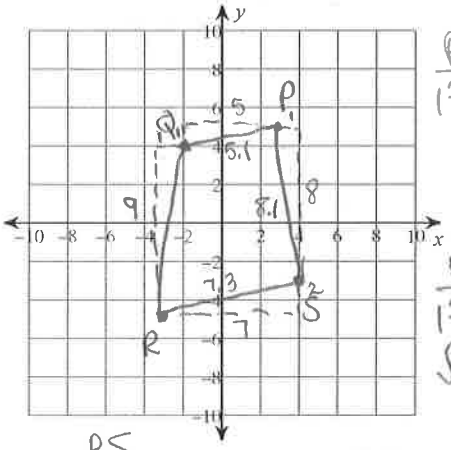
$\frac{1}{2}(6)(4+8)$

$3(12)$

$\boxed{36 \text{ units}^2}$

Area Trapezoid $= \frac{1}{2}h(b_1+b_2)$

22) P(3, 5), Q(-2, 4), R(-3, -5) and S(4, -3)



PQ

$1^2+5^2=c^2$

$\sqrt{26}=\sqrt{c^2}$

$5.1=c$

PS

$1^2+8^2=c^2$

$\sqrt{65}=\sqrt{c^2}$

$8.1=c$

RS

$2^2+7^2=c^2$

$\sqrt{53}=\sqrt{c^2}$

$7.3=c$

RQ

$1^2+9^2=c^2$

$\sqrt{82}=\sqrt{c^2}$

$9.1=c$

Perimeter PQRS

$5.1+8.1+7.3+9.1$

$\boxed{29.6 \text{ units}}$

Area PQRS

$10-(2.5+4+4.5+7+1)$

$\boxed{50 \text{ units}^2}$