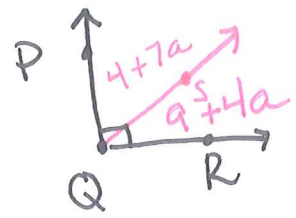
14.) 

Find $\angle PQS$ and $\angle SQR$

$\angle PQR = 90°$ def of $\perp$

$\angle PQS + \angle SQR = \angle PQR$ angle addition

$\angle PQS + \angle SQR = 90°$ substitution

$4+7a+9+4a=90°$ substitution

$13+11a=90$ CLT

$11a=77°$ subtraction

$a=7°$ division

$\angle PQS = 4+7(7)$, $\angle SQR = 9+4(7)$ substitution

$\angle PQS = 53°$, $\angle SQR = 37°$ CLT

15.) The measure of the suppl of an angle is 60° less than 3 times the compl. of the angle. Find measure of the angle.

$\angle 1$ = the x°

① $\angle 1 + x = 180$

$\angle 1 + y = 90°$

$x = 3y - 60$ (Plug this in for x)

② $\angle 1 + y = 90$

$-y \quad -y$

$\angle 1 = 90 - y$ (Plug this in for $\angle 1$)

③ $\angle 1 + x = 180°$

$90 - y + 3y - 60 = 180$

$2y + 30 = 180$

$2y = 150$

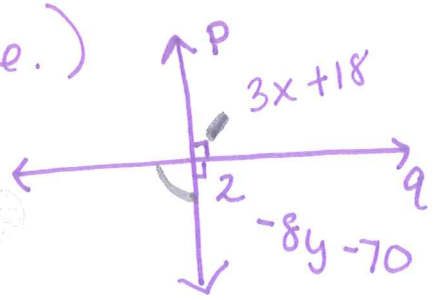
$y = 75°$

$\angle 1 + y = 90$

$\angle 1 + 75 = 90$

$\angle 1 = 15°$

16.)



$\angle 1 = 90°$ def of $\perp$

$3x + 18 = 90$

$3x = 72$

$\boxed{x = 24}$

$\angle 2 = 90°$ def of $\perp$

$-8y - 70 = 90$

$y = -20$

17.) $x + y = 180$ def of suppl.

x = the $\angle$s suppl.

$x = y - 44$ Substitution Part

$y - 44 + y = 180$

$2y = 224$

$\boxed{y = 112°}$

$\boxed{x = 68°}$

18.) $84°, 96°$

19.) $\angle 1 = 4\angle 2 - 5$ $\quad y = 4x - 5$

$\angle 1 + \angle 2 = 180°$ linear pairs are suppl. $x + y = 180°$

$4 \cdot \angle 2 - 5 + \angle 2 = 180$

$5\angle 2 - 5 = 180$

$5\angle 2 = 185$

$\boxed{\angle 2 = 37°}$

$\boxed{\angle 1 = 143°}$

20.) $\angle CFD = 90°$ def of ⊥

$12a + 45 = 90$

$\boxed{a = 3.75}$

21.) $\angle AFB + \angle BFC = \angle ABC$ angle addition

$\angle AFC = 90°$ def of ⊥.

$\angle AFB + \angle BFC = 90°$ Substitution

$8x - 6 + 14x + 8 = 90$

$x = 4$

22.) $\angle BFA \cong \angle DFE$ Vertical ∠s are ≅

$r = 18$

$\angle AFE + \angle AFB = 180°$ linear pairs are suppl.

$\angle AFE + 3(18) + 12 = 180$

$\boxed{\angle AFE = 114°}$

(23-27 explain reasoning)

23.) Yes 24.) NO 25.) Yes 26) NO 27.) Yes

28.) A LOT students need tourniquets!

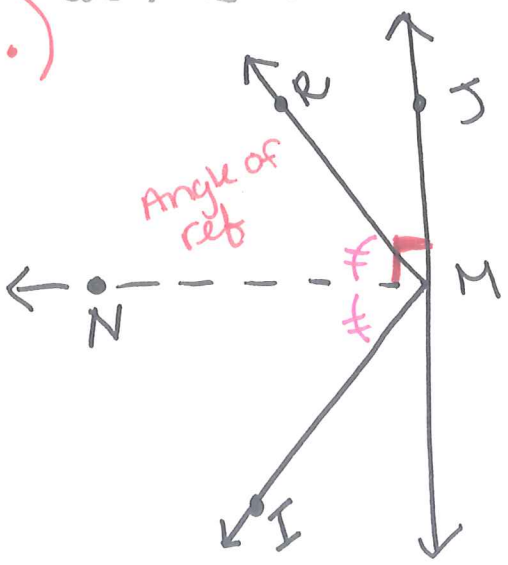
29.) always

30.) always

31.) sometimes

32.) never!!!

33.)



know $\angle RMI = 106°$

$\therefore \angle RMN = \frac{1}{2}106°$

$\angle RMN = 53°$

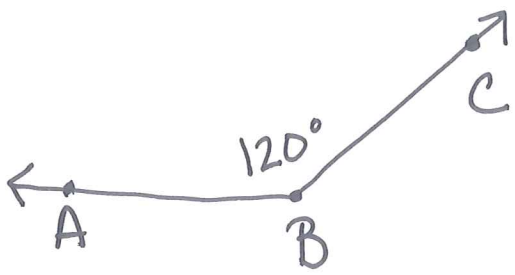
↑ means therefore

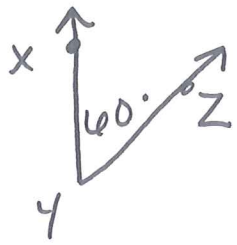
$\angle RMN + \angle RMJ = 90°$ def of ⊥

$53° + \angle RMJ = 90$

$\boxed{\angle RMJ = 37°}$

36.) 2 ∠s are suppl. but not Adj





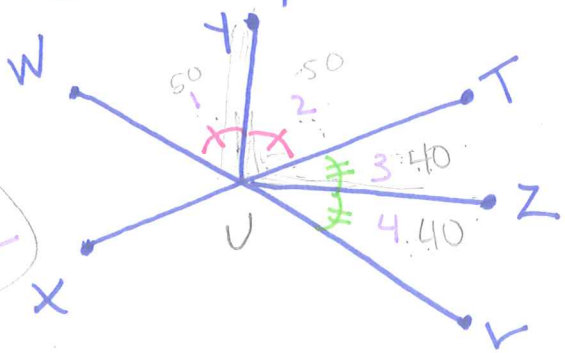
37.) If 2 adj ∠s form a linear pair they must be suppl.

* Suppl means 2 angles add to = 180
* 2 adj which create a straight ∠ through ∠ addition form a linear Pair

∴ This statement is true!

You may not do this on a test

38.) See example 36



39.) Show ∠YUZ

$\angle 1+\angle 2+\angle 3+\angle 4 = 180$

$\angle 2+\angle 2+\angle 3+\angle 3 = 180$

$2\angle 2+2\angle 3 = 180$

$\angle 2+\angle 3 = \frac{1}{2}180$

$\angle 2+\angle 3 = 90°$

40.) Answers will vary. And should be detailed