Conditional Sentences and Logical Reasoning 2

Geometry

Identify the hypothesis and conclusion in each conditional sentence, then write the converse.

1) If you eat lasagna, then you are Italian..
Hyp- you eat lasagna
Concl- you are Italian
Converse- If you are Italian, then you eat lasagna

2) If you stay up late, then you might see a falling star.
Hyp- you stay up late
Concl- you might see a falling star
Converse- If you see a falling star, you might be up late.

3) If they win the game, then they will get a trophy.
Hyp- they win the game
Concl- they will get a trophy
Converse- If they get a trophy, then they won the game.

4) If the gardener waters the flowers, then they will grow.
Hyp- the gardener waters the flowers
Concl- they will grow
Converse- If the flowers grow, then the gardener watered them.

5) The group can go to the museum, if they get a car.
Hyp- they get a car
Concl- the group can go to the museum
Converse- If the group goes to the museum, they must get a car.

6) He will fall, if he isn't careful.
Hyp- he isn't careful
Concl- he will fall
Converse- If he falls, then he isn't careful

7) If he asks her out on a date, she will graciously accept the offer.
Hyp- he asks her out on a date
Concl- she will graciously accept the offer
Converse- If she graciously accepts the offer, then he asked her out on a date.

8) If you stand in front of the group, you had better know your stuff.
Hyp- you stand in front of the group
Concl- you had better know your stuff
Converse- If you better know your stuff, then you stand in front of the group.

9) If 4x − 7 = 25, then x = 8
Hyp- $4x - 7 = 25$
Concl- $x = 8$
Converse- If $x = 8$, then $4x - 7 = 25$

10) t = 3, if 9t + 1 = 28
Hyp- $9t + 1 = 28$
Concl- $t = 3$
Converse- If $t = 3$, then $9t + 1 = 28$

Write the following sentences in conditional form.

11) Kids who go to school have lots of fun.

If kids go to school, then they have lots of fun.

12) Astronauts fly in space ships.

If a person is an astronaut, he flies in space ships.

13) Americans stand during the National Anthem.

If you are an American, you stand during the National Anthem.

14) Children enjoy reading nursery rhymes.

If you are a child, you enjoy reading nursery rhymes.

Determine whether each statement and it's converse are true or false.

15) If you get your family portrait, then your mom will expect you to comb your hair.
True; Converse False

16) If you travel one mile in one minute, then you are going sixty miles per hour.
True; Converse True

17) If a person is fat, then they are also short.
False; Converse False

18) If the animal eats bananas, then it is a chimpanzee.
False; Converse True

Give a counterexample for each conclusion.

19) All angles are acute.
Obtuse

20) All trees have leaves.
Pine Tree

21) All quadrilaterals are squares.
Trapezoid

22) Everybody loves the Los Angeles Lakers.
Clippers Fans

23) Girls have blond hair.
Red

24) Every month has 30 or 31 days.
February

25) All trucks have four wheels.
Cement Truck

26) Every conclusion has a counterexample
Planets have elliptical orbits

Use the following assumptions to reach a conclusion.

27) i) Teachers love to write on the whiteboard.
    ii). Mr. Herring is a teacher.

Mr. Herring loves to write on the whiteboard

28) i) I am late to school whenever I have to scrape. the frost off of my windshield.
    ii) There is frost on my windshield this morning.
I will be late to school this morning

29) i) We stand for the national anthem on Mondays.
    ii) It is Tuesday.
We will not stand for the national anthem today.

30) i) Leopards have spots..
    ii) That animal is a leopard.

That animal has spots

31) i) John is faster than Tim.
    ii) Tim runs a five minute mile.
                              .
John runs under a five minute mile

32) i) Cindy earned $75.
    ii) Pam earned twice as much money as Cindy.

Pam earned $150

33)   i)   Brad earned 15 more points on his test than Sam.
            ii) Sam earned 3/4 of the points that Paul earned.
            iii) Paul earned twice as many points as Jim.
            iv) Jim earned 40 points on the test.

$$B = 15 + S = 15 + 60 = 75$$
$$S = \frac{3}{4} P = \frac{3}{4}(80) = 60$$
$$P = 2J = 2(40) = 80$$
$$J = 40$$

34)   i)   Lynette is taller than Amanda.
            ii) Amanda is four inches taller than Jennifer.
            iii) Jennifer is 5'2".

Amanda = 5'2" + 4" = 5'6"

So Lynette is taller than 5'6"

35)   i)   My mom makes fudge for Christmas.
            ii) When my mom makes fudge, I eat fudge.
            iii) When I eat fudge I gain weight.
            iv) When I gain weight my clothes don't fit.
            v)   It is Christmas.

I hope my mom gives me new, bigger clothes because the clothes I have do not fit.