

Rewrite the conditional statements below in if-then form.

- 1 Eighteen year olds may vote in federal elections. _____
- 2 Hillgrove sells chicken biscuits on Thursdays. _____
- 3 A number is divisible by 6 if it is divisible by 2 and 3. _____

Write the requested statement for each item below.

- 4. If it is raining, we will not have a picnic.
Negation of the conclusion _____
- 5. If x is odd, then $3x$ is odd.
Contrapositive _____
- 6. If I find a penny, then I will have good luck.
Inverse _____
- 7. If I work at Brusters, then I can get free ice cream.
Converse _____

Is this a biconditional statement? _____ Why?
- 8. If I eat pretzels, then I will get thirsty.
 $\sim p$ _____
- 9. If she stays home, then we will not go to the mall.
Contrapositive _____

Decide whether the statements are true or false. If false, provide a counterexample.

- 10. If $x^2 = 36$, then x must equal 6. _____
- 11. If Sue visited Springfield, then she has been to Illinois. _____
- 12. The equation $3x + 3 = 48$ has exactly one solution. _____
- 13. If $x > 0$, then $x^2 > x$. _____
- 14. If Ken lives in Illinois, then he lives in Chicago _____



Assume the following statements are true. Complete the chain of reasoning.

- 15) If the sun is shining, then it is a beautiful day.
If it is a beautiful day, then we will have a picnic.

Conclusion: _____

- 16) If I get thirsty, then I will drink water.
If I go to lunch, then I eat a sandwich.
If the bell rings, then I will go to lunch.
If I eat a sandwich, then I get thirsty.
If I go to class, then the bell rings.
If I go to school, then I go to class.

Conclusion: _____

- 17) _____.
If I go to the mall, then I will see a movie.
If I see a movie then I will eat popcorn.

Conclusion: If I make an A, then I eat popcorn.