

P.I. G.G.26: Identify and write the inverse, converse, and contrapositive of a given conditional statement and note the logical equivalences

1. Find the inverse of the following statement. If a figure has four sides, it is a quadrilateral.

[A] If a figure does not have four sides, it is a quadrilateral.
[B] If a figure is a quadrilateral, it does not have four sides.
[C] If a figure has four sides, it is not a quadrilateral.
[D] If a figure does not have four sides, it is not a quadrilateral.

2. Find the inverse of the following statement. If she studies hard in math, she will succeed.

[A] If she does not study hard in math, she will not succeed.
[B] If she studies hard in math, she will not succeed.
[C] If she does not study hard in math, she will succeed.
[D] If she will succeed, then she does not study hard in math.

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3. Find the inverse of the following statement. If you have sea water, you can make salt.

[A] If you don't have sea water, you can't make salt.
[B] If you can make salt, you do not have sea water.
[C] If you do not have sea water, you can make salt.
[D] If you have sea water, you can't make salt.

4. Find the inverse of the following statement. If a figure has three sides, it is a triangle.

[A] If a figure is a triangle, then it does not have three sides.
[B] If a figure does not have three sides, it is a triangle.
[C] If a figure has three sides, it is not a triangle.
[D] If a figure does not have three sides, it is not a triangle.

5. Write a conditional that has the same truth value as its inverse and one that has the opposite truth value as its inverse.

[1] D

[2] A

[3] A

[4] D

Answers may vary. Samples: if $x + 2 = 5$,
then $x = 3$ and if a number is negative, then it

[5] is not equal to zero.