1. Use this conditional:

If ten is divided by any number, then the result is a number less than ten.

a. State the hypothesis.

10 is divided by any #.

b. State the conclusion.

the result is a # < 10.

c. Is this conditional true? If not, give a counterexample.

False

10/½ > 10

10/1 = 10

2. Use this conditional: If a figure is a triangle, then it has three sides.

a. Is this conditional true? If not, give a counterexample.

True

b. Write the converse of this conditional.

If a figure has 3 sides, then it is a Δ.

c. Is the converse true? If not, give a counterexample.

True.

3. Identify the hypothesis of the conditional: "If it is Saturday, then we do not go to school.
[A] If [B] then [C] it is Saturday [D] we do not go to school

4. Identify the conclusion of the conditional: "If it is Saturday, then we do not go to school."
[A] If [B] then [C] it is Saturday [D] we do not go to school

5. Identify the correct converse of the conditional: "If it is Saturday, then we do not go to school."

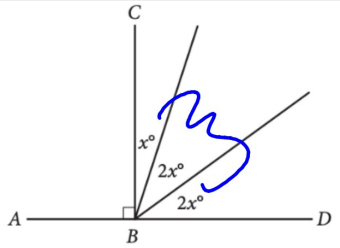
[A] If we do not go to school, then it is Saturday.

[B] If it is not Saturday, then we do go to school.

[C] If we go to school, then it is not Saturday.

[D] If it is Sunday, then we do not go to school

6.



In the figure above, point B lies on $\overline{AD}$. What is the value of $3x$?

A) 18

B) 36

C) 54

D) 72

x + 2x + 2x = 90

5x = 90

x = 18

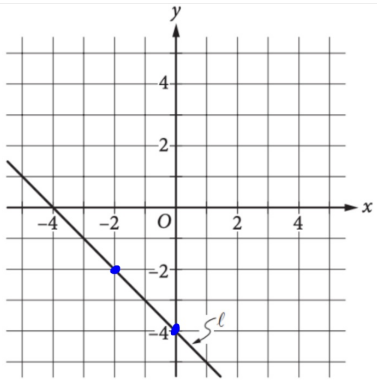
7. In the xy-plane, the graph of the function $f(x) = x^2 + 5x + 4$ has two x-intercepts. What is the distance between the x-intercepts?

A) 1
B) 2
C) 3
D) 4

4
4 1
5

$(x+4)(x+1)=0$
$x=-4,-1$

8.



$y=mx+b$
$y=-1x-4$
$x+y=-4$

Which of the following is an equation of line ℓ in the xy-plane above?

A) $x - y = -4$
B) $x - y = 4$
C) $x + y = -4$
D) $x + y = 4$

9. $\sqrt{4x} = x - 3$

What are all values of x that satisfy the given equation?

I. 1
II. 9

A) I only
B) II only
C) I and II
D) Neither I nor II

$\sqrt{4\cdot 1} = 1-3$
$2 \neq -2$
$\sqrt{4\cdot 9} = 9-3$
$6=6$ ✓

1. **REVIEW** What is the slope, m, of each of the following lines?

a. $y = \frac{1}{2}x + 6$ $m =$ 1/2

b. $y = \frac{3}{4} - 4x$ $m =$ −4

c. $2x + 5y = 10$ $m =$ −2/5

d. $y - 8 = 5(x + 2)$ $m =$ 5

2. Name at least three real-life examples of parallel lines.

power lines, bridges, streets

3. Write a definition for **parallel lines**.

lines that lie in the same plane and never touch

4. Write a definition for **skew lines**.

lines that lie in diff planes and therefore never touch.

5. What does it mean to say parallel lines are equidistant from each other?

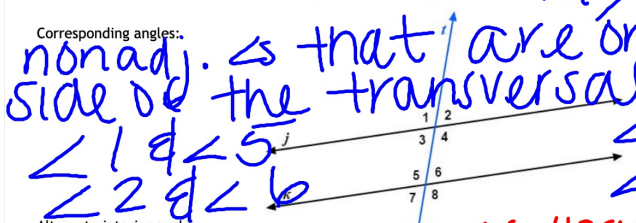
"same measure"

lines are the same distance from each other

1. Write a definition for a **transversal** and then draw an illustration.

2. Using the diagram, identify all pairs of the special angles. Write a definition for each special angle pair.

∠2 & ∠8 Same side ext.



Corresponding angles:

nonadj. ∠s that are on the same side of the transversal

∠1 & ∠5

∠2 & ∠6

∠3 & ∠7

∠4 & ∠8

Alternate interior angles:

nonadj interior ∠s that lie on opp. sides of tranversal. ∠4 & ∠5

∠6 & ∠3

Alternate exterior angles:

exterior ∠1 & ∠8; ∠2 & ∠7

Consecutive interior angles:

(same side int)

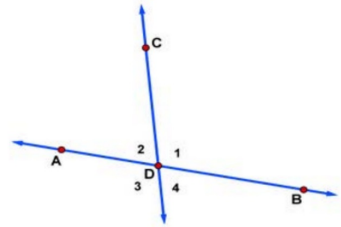
∠3 & ∠5

∠4 & ∠6

lie inside but on same side of transversal

3. Based on your exploration, write conjectures about the corresponding angles, alternate interior angles, alternate exterior angles, and consecutive interior angles formed when parallel lines are cut by a transversal. Write your conjectures as conditional statements, using the if-then format.

4. $\overleftrightarrow{AB}$ intersects $\overleftrightarrow{CD}$ and forms four angles, labeled 1-4 in the diagram. Translate $\overline{AB}$ along $\overline{DC}$ so that **D** coincides with **C**. What is the resulting image and how does it justify the conjectures you made about corresponding angles formed by two lines cut by a transversal?



CW:

SAS #2

Questions 5-8