Module 3 TEST

NAME: _____

PERIO

(1) **Determine whether $\overline{AB}$ and $\overline{CD}$ are *parallel, perpendicular,* or *neither.* You must use the slope formula to justify your answers.**

A(−2, 2), B(4, 4), C(−1, 4), D(1, −2)

*Also graph $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ to prove.

(2) (A) Graph the line perpendicular to $y = -\frac{3}{2}x + 1$ that passes through the point at (−3, −4).

(B) Write the equation of the line

(3) Graph the line parallel to the line y=x -4 that passes through the point at (-3,1).

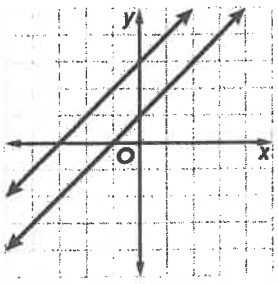
Part A) graph both lines.

Part B) Write the equation of the line.

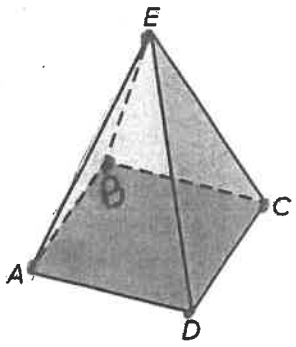
(4) What is the shortest distance between the line y=2x +4 and the point at (4,2)? Leave your answer in simplest radical form.

*Make sure to graph both lines.

(5) What is the distance between parallel lines $y = x + 3$ and $y = x + 1$, rounded to the nearest hundredth?



(6) Match each segment to the term that describes how it is related to $\overline{AB}$.

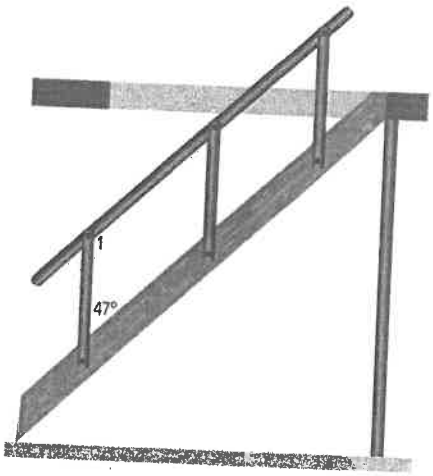


1) $\overline{AE}$ A. skew

2) $\overline{CD}$ B. intersecting

3) $\overline{DE}$ C. parallel

(7) **STAIRS** Julie is building this staircase with a rail.

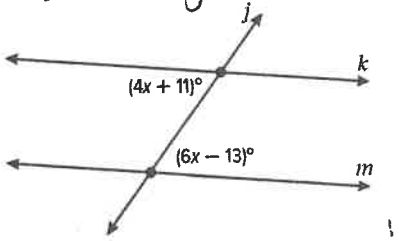


What measure of ∠1 will ensure that the rail is parallel to the bottom of the staircase?

(8) Point *C* is the midpoint of $\overline{AB}$ and point *B* is between points *A* and *D*. If *AD* = 15 and *BD* = 7, what is *CD*?

(Draw it out)

(9) Find the value of *x* that will make $k \parallel m$.
Find the angle measures.



(10)

. Determine whether each pair of lines parallel, perpendicular, or neither.

a) $y=4x-5$ and $y-\frac{1}{4} = 2(x-5)$

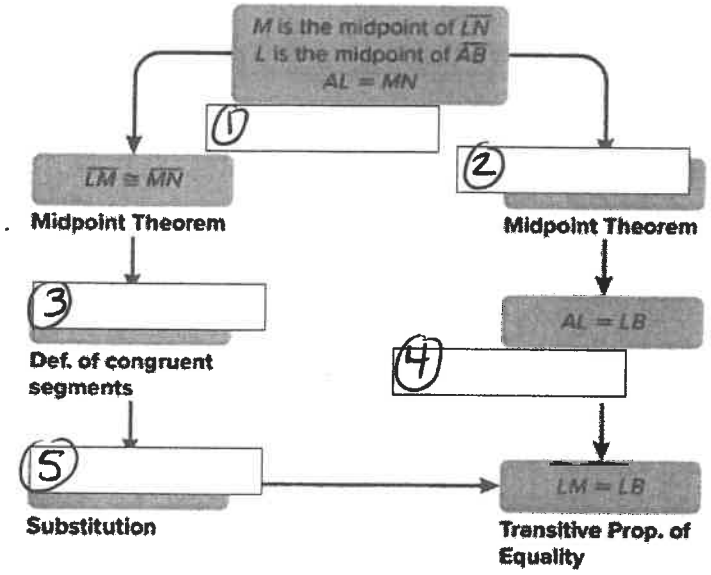
b) $y+4=2(x-7)$ and $y = -\frac{1}{2}x + 8$

c) $x = 7$ and $x = -3$

d) $y-3 = -6(x+1)$ and $y+5 = -6(x+4)$

(11)

PROOF Complete the flow proof to prove that if point M is the midpoint of $\overline{LN}$, point L is the midpoint of $\overline{AB}$, and $AL = MN$, then $LM = LB$. Drag the statements and reasons to complete the proof.



Choices to use for above proof: *1 for each box (5 points total)

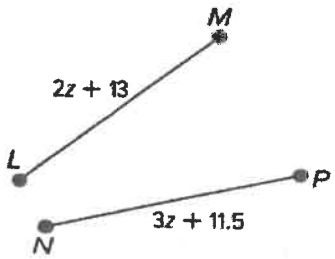
Def. of congruent segments	$LM = AL$	$\overline{AL} \cong \overline{LB}$
Given	$LM = MN$	

(12)

PROOF Complete the two-column proof by dragging the missing statements and reasons into the correct order.

Given: $\overline{LM} \cong \overline{NP}$

Prove: $z = 1.5$



Statements	Reasons
1. ?	1. Given
2. $LM = NP$	2. ?
3. ?	3. Substitution Property of Equality
4. ?	4. Subtraction Property of Equality
5. $1.5 = z$	5. Subtraction Property of Equality
6. $z = 1.5$	6. ?

* Work 5 points

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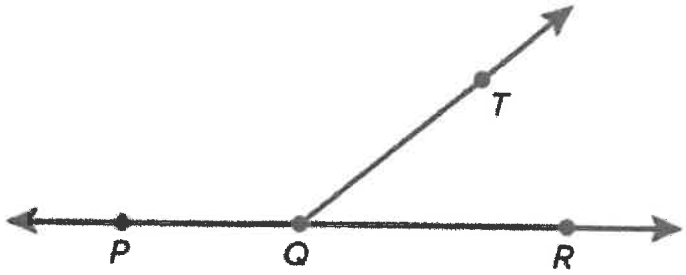
PROOF Complete the two-column proof for the given theorem by dragging the missing statements and reasons into the correct order.

Supplement Theorem
Given: $\angle PQT$ and $\angle TQR$ form a linear pair.
Prove: $\angle PQT$ and $\angle TQR$ are supplementary.

☆ worth 6 points



Proof:

Statements	Reasons
1. $\angle PQT$ and $\angle TQR$ form a linear pair.	1. ?
2. ?	2. Given from figure
3. ?	3. Def. of straight angle
4. $m\angle PQT + m\angle TQR = m\angle PQR$	4. ?
5. ?	5. Substituti on
6. $\angle PQT$ and $\angle TQR$ are supplementary.	6. ?

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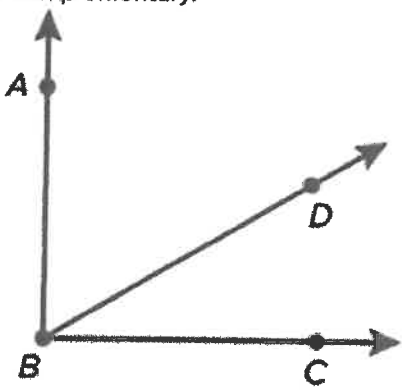
PROOF Complete the two-column proof for the given theorem by dragging the missing statements and reasons into the correct order.

Complement Theorem
Given: $\angle ABC$ is a right angle.
Prove: $\angle ABD$ and $\angle CBD$ are complementary.

☆ worth 5 points



Proof:

Statements	Reasons
1. ?	1. Given
2. $m\angle ABC = 90°$	2. ?
3. ?	3. Angle Add. Post.
4. ?	4. Substitution
5. $\angle ABD$ and $\angle CBD$ are complementary.	5. ?