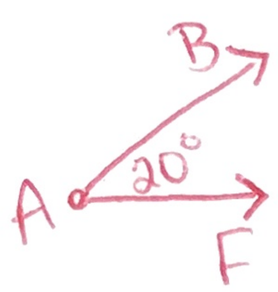
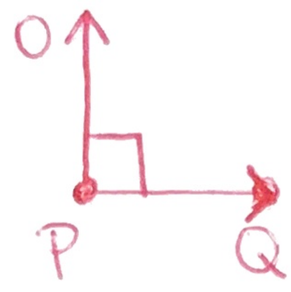
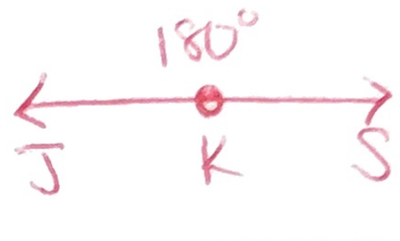
Name: _____ Date: Feb 26 Hour: 2nd

Unit 6B Day 12 and 13: Basic Angles Review

Focus Question: What are the words I should already know about angles?

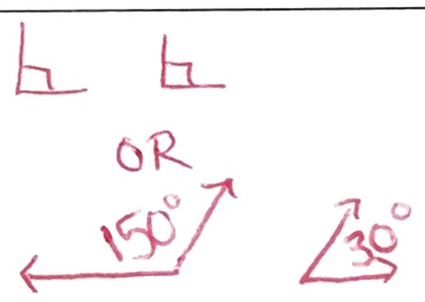
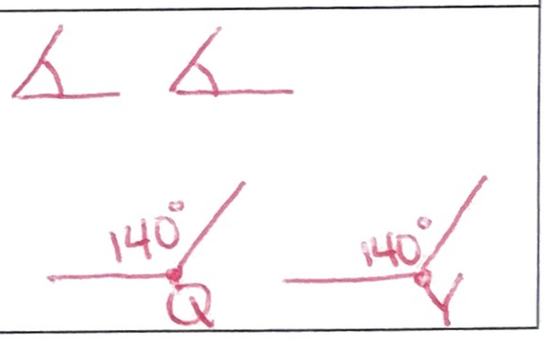
A.

The Four Basic Angles: Fill in the table for each angle given below.

Angle Type	Acute	Right	Obtuse	Straight
Definition	an angle less than 90°	an angle exactly 90°	an angle > 90° but less than 180°	an angle exactly 180°
Picture				
Name	∠A or ∠BAF	∠P or ∠OPQ	∠X or ∠RXZ	∠K or ∠JKS

Special Angle Relationships: You should also already know how some angles are related to each other.

Fill in the table for the angle relationships.

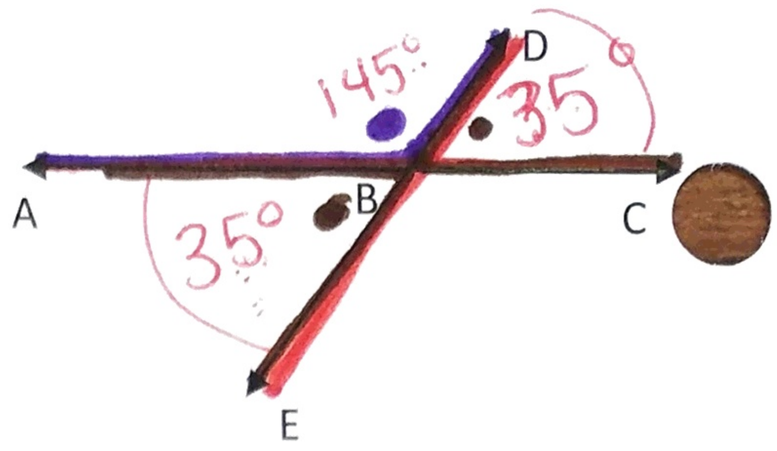
Relationship	Complementary	Supplementary	Congruent
Definition	angles whose sum is 90° (both acute)	angles whose sum is 180°	angles with same measure (arc)
Picture/Example			 ∠Q ≅ ∠Y

B. Practice:

1. If angle A measures 27°,
   a. What is the measure of a complementary angle? 90 − 27 = 63°
   b. What is the measure of a supplementary angle? 180 − 27 = 153°
   c. What is the measure of a congruent angle? same 27°
2. If angle R measures 82°,
   a. What is the measure of a complementary angle? 90 − 82 = 8°
   b. What is the measure of a supplementary angle? 180 − 82 = 98°
   c. What is the measure of a congruent angle? same 82°

C. Linear Pairs and Vertical Angles

There are special angle relationships formed by intersecting lines



1. What do you know about $\angle ABC$? 180° (straight)

2. What must be true about the measure of $\angle ABD$ and $\angle DBC$?
add up to 180°

3. $\angle ABD$ and $\angle DBC$ are called Linear Pairs (2 adjacent angles that make a line)
These types of angles are supplementary.

4. If $m\angle ABD = 145°$, find $m\angle DBC$. 180 − 145 = 35°

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5. What do you know about $\angle EBD$?
180° (straight)

6. What must be true about the measure of $\angle ABD$ and $\angle EBA$?
add up to 180° (supplementary)

7. If $m\angle ABD = 145°$, find $m\angle EBA$.
180 - 145 = 35°

8. What do you notice about $\angle DBC$ and $\angle EBA$? They are congruent
35° 35°

9. $\angle DBC$ and $\angle EBA$ are called Vertical angles (angles opposite each other when lines intersect)
These types of angles are $\cong$.

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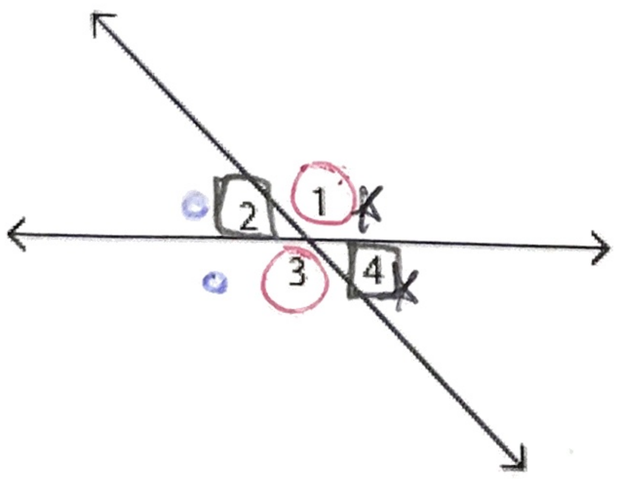
10. Tell whether each pair of angles is vertical or linear.



a) $\angle 1$ and $\angle 3$ Vertical

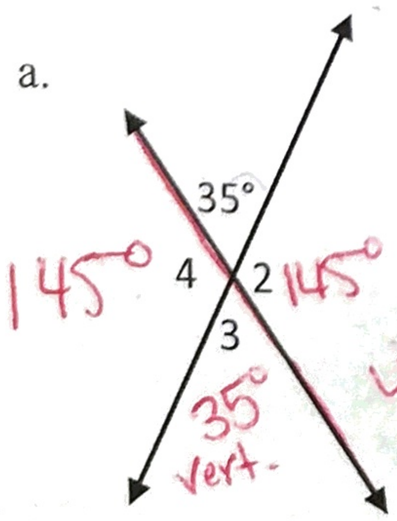
b) $\angle 1$ and $\angle 4$ Linear

c) $\angle 2$ and $\angle 3$ Linear

d) $\angle 2$ and $\angle 4$ Vertical

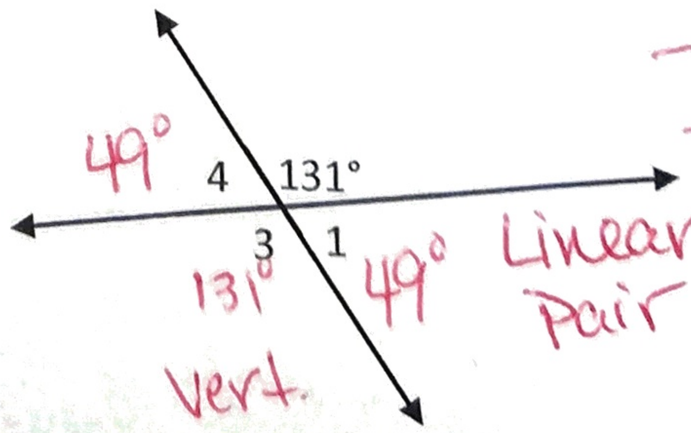
11. Given the measure of one angle find the measure of the 3 non-given angles.

a.



180
− 35
145°

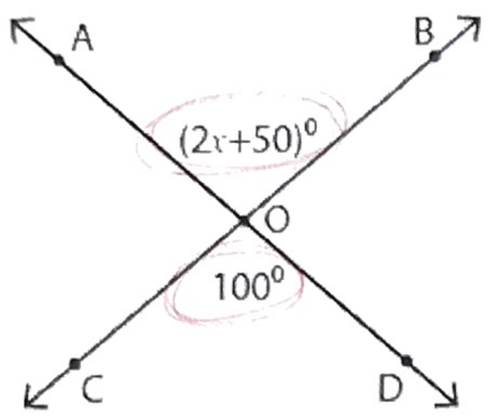
b.



180
− 131
49

12. Tell whether each pair of angles is linear or vertical. Then find the value of the variable.

1.



Vertical ≅

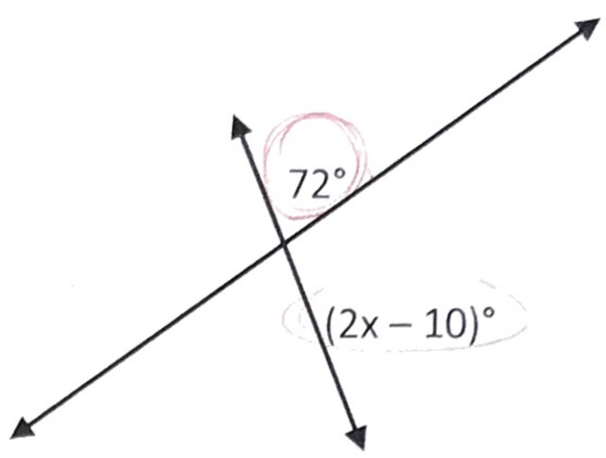
$2x + 50 = 100$

$-50 \quad -50$

$\frac{2x}{2} = \frac{50}{2}$

$x = 25$

2.



Linear Supplementary

$72 + 2x - 10 = 180$

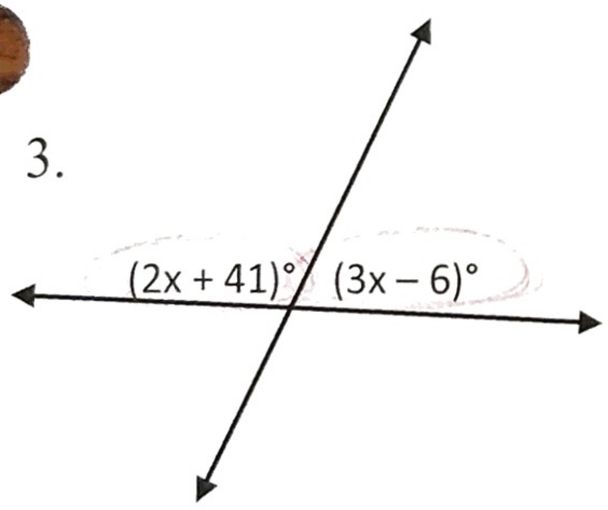
$62 + 2x = 180$

$-62 \quad -62$

$\frac{2x}{2} = \frac{118}{2}$

$x = 59$

3.



Linear Suppl.

$2x + 41 + 3x - 6 = 180$

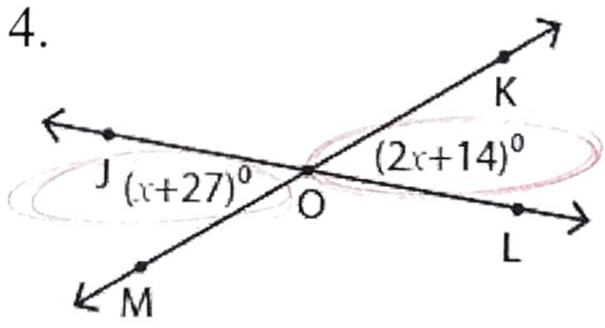
$5x + 35 = 180$

$-35 \quad -35$

$\frac{5x}{5} = \frac{145}{5}$

$x = 29$

4.



vertical ≅

$1x + 27 = 2x + 14$ *

$-1x \quad -1x$

$27 = x + 14$

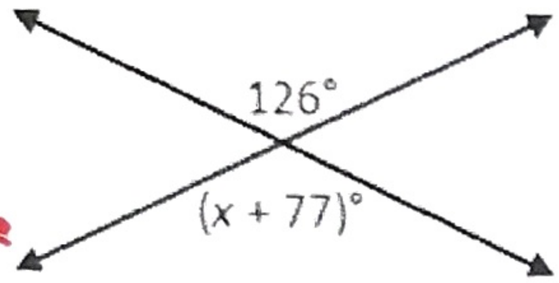
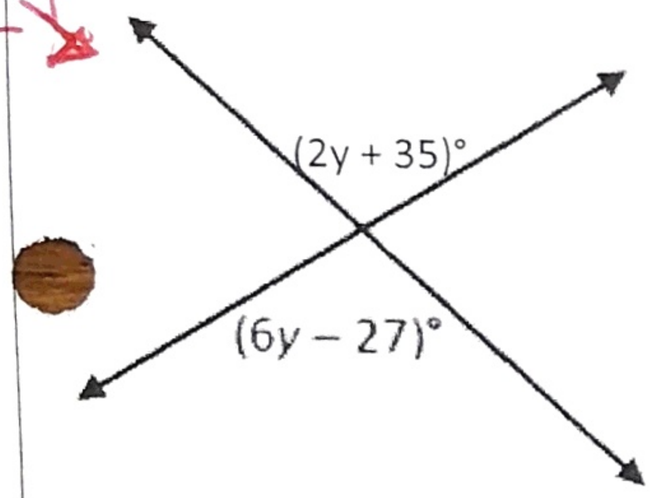
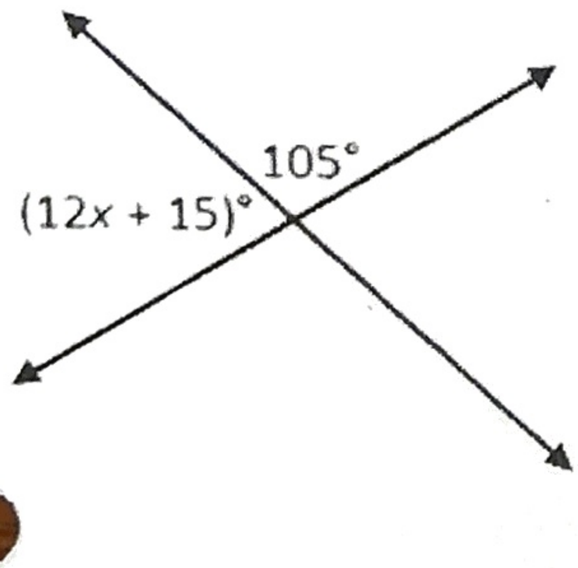
$-14 \quad -14$

$13 = x$

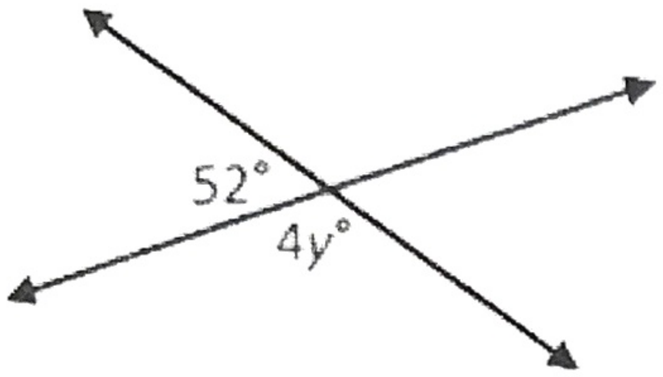
13. Practice with the provided worksheet

Linear and Vertical Practice Sheet Name: _____

For each picture below, label the angles as either "Linear" or "Vertical." Then tell whether they are "supplementary" or "congruent." Finally, use what you know to find the value of the variable.

Picture	Linear/Vertical	Supplementary/Congruent	Work for Variable
 Pick one	✓	≅	$x+77=126$ $-77 \quad -77$ $x=49$
	✓	≅	$2y+35 = 6y-27$ $-2y \quad -2y$ $35 = 4y-27$ $+27 \quad +27$ $\frac{62}{4} = \frac{4y}{4}$ $15.5 = y$
			

Pick one



L

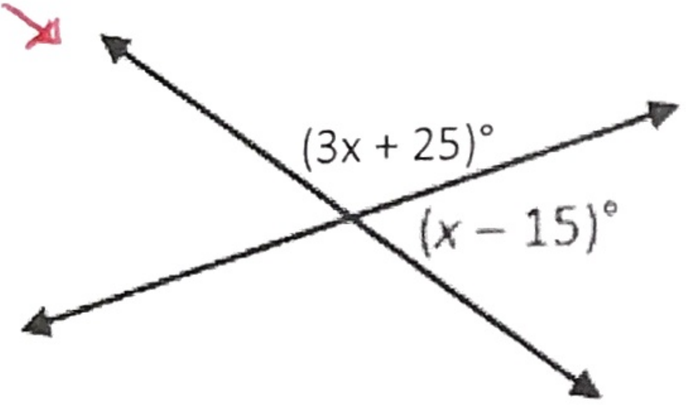
Supp

$52+4y=180$

$-52 \quad -52$

$\frac{4y}{4} = \frac{128}{4}$

$y = 32$



L

Supp

$3x+25+x-15=180$

$4x+10=180$

$-10 \quad -10$

$\frac{4x}{4} = \frac{170}{4}$

$x = 42.5$