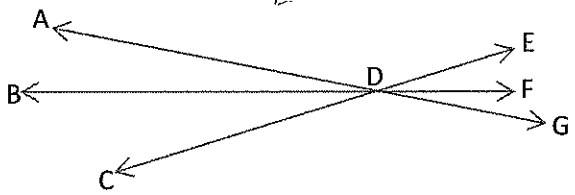
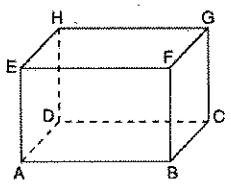
Geometry Unit 2 Review

1. What point is collinear to C and D? E



2. State the intersection of plane HGCD and plane ABCD

$\overline{CD}$



3. What lines are skew to AD? (There are four)

$\overline{EF}$, $\overline{GH}$, $\overline{FB}$, $\overline{CC}$

4. How many points does it take to create a line? How many points does it take to create a plane?

2 3

5. Draw a rectangular plane ABC

6. Draw line $\overleftrightarrow{RS}$

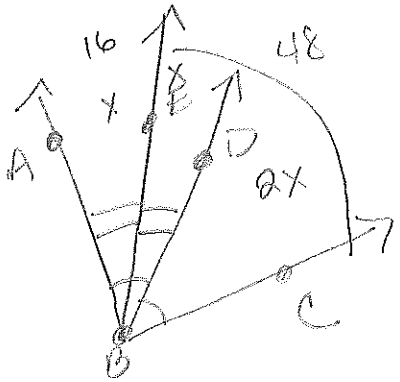
7. Given:

$\overrightarrow{BD}$ bisects $\angle ABC$.

$\overrightarrow{BE}$ bisects $\angle ABD$.

$m\angle EBC = 48°$

What is $m\angle ABD$?



$x + 2x = 48$
$3x = 48$
$x = 16$

So $\angle ABC = x + 48$
$= 16 + 48$
$= 64°$

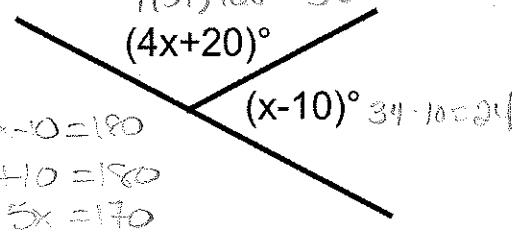
8. What is the difference between a line, a segment, and a ray? Draw line XY, segment XY, and ray XY. Name them using the correct notation.

line - extends in both directions $\overleftrightarrow{XY}$ 

segment - has 2 endpoints $\overline{XY}$ 

Ray - has one endpoint and extends forever in one direction $\overrightarrow{XY}$ 

9. Find x then find each angle measurement.

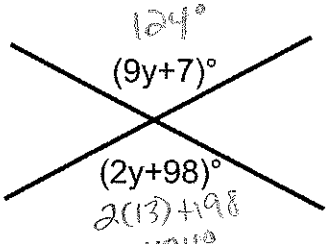


$4(34) + 20 = 156°$

$34 - 10 = 24$

$4x + 20 + x - 10 = 180$
$5x + 10 = 180$
$5x = 170$
$x = 34$

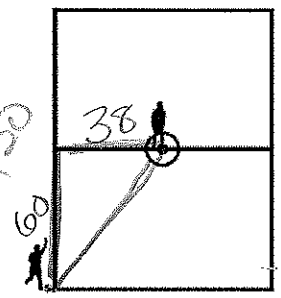
10. Find y then find each angle measurement (including the non-labeled angles)



$9y + 7 = 2y + 98$
$7y = 91$
$y = 13$

$2(13) + 98$
$124°$

11. The dimensions of a soccer field are 76 yards by 120 yards. A player kicks the ball from a corner to her teammate in the exact center of the field. What is the distance, to the nearest yard, the ball travels?



$a^2+b^2=c^2$
$38^2+60^2=c^2$
$1444+3600=c^2$
$5044=c^2$
$71.02=c$

about 71 yards

12. A high school basketball team is going to Cleveland to see a NBA game. A coordinate grid is superimposed on a highway map of Ohio. The high school is at point (2, 4) and Quicken Loans Arena is at the point (7, 1). The map shows a highway rest stop halfway between the cities. What are the coordinates of the rest stop? What is the approximate distance between the high school and the stadium? (One unit ~ 3.7 miles)

rest stop = midpoint of (2,4) and (7,1) $= \left(\frac{2+7}{2}, \frac{1+4}{2}\right) = \left(\frac{9}{2}, \frac{5}{2}\right)$

high school to stadium distance $= \sqrt{(7-2)^2+(1-4)^2} = \sqrt{5^2+(-3)^2} = \sqrt{25+9} = \sqrt{34} \approx 5.83$ units

$\times 3.7$
21.57 miles

13. On the (x, y) coordinate plane, ΔABC has coordinates $A(-7, 5), B(-2, -2), C(1,3)$. What is the length of the segment that joins vertex A with the midpoint of $\overline{BC}$? Round to the nearest tenth.

midpoint of $BC = \left(\frac{-2+1}{2}, \frac{-2+3}{2}\right) = \left(\frac{-1}{2}, \frac{1}{2}\right)$

distance between A + midpoint of $BC = \sqrt{(-7-\frac{-1}{2})^2+(5-\frac{1}{2})^2} = \sqrt{(-6.5)^2+(4.5)^2}$
$= \sqrt{42.25+20.25} = \sqrt{62.5} = 7.9$ units

14. M is the midpoint of $\overline{AB}$ for the points A(4, -3) and B(-6, 5). Find MB. Round to the nearest tenth.

$M = \left(\frac{4+-6}{2}, \frac{-3+5}{2}\right) = \left(\frac{-2}{2}, \frac{2}{2}\right) = (-1, 1)$

$MB = \sqrt{(-6-1)^2+(5-1)^2} = \sqrt{(-5)^2+(4)^2} = \sqrt{25+16} = \sqrt{41}$
$= 6.4$ units

15. Angle A and Angle B are supplementary. If angle A =x, what is the measure of angle B in terms of x?

$m\angle B = 180 - x$

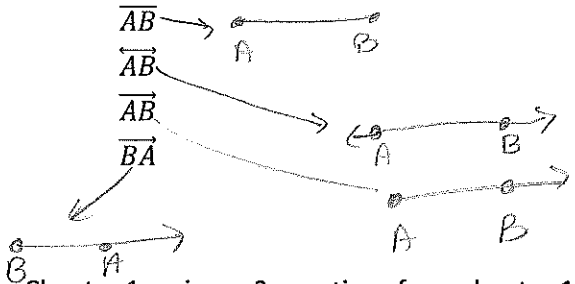
16. 4 times the measure of the supplement of an angle is 100 degrees more than 9 times the measure of the angle's complement. Find the measure of the angle, it's complement, and it's supplement.

let x = the ∠'s measure
then 180 − x = its supplement
and 90 − x = its complement

$4(180-x) = 100+9(90-x)$
$720-4x = 100+810-9x$
$720-4x = 910-9x$
$-910 \quad +4x \quad -910 \quad +4x$
$-190 = -5x$
$38 = x$

Supplement $= 180-38 = 142°$
Complement $= 90-38 = 52°$

17. Draw each of the following.

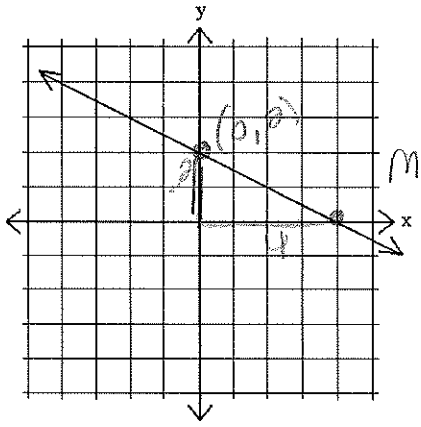


Chapter 1 review – 2 questions from chapter 1 will show up on the chapter 2 test!

18. Write the equation of the line in
A. slope-intercept form $y = -\frac{1}{2}x + 2$
B. standard form.

$2\left(\frac{1}{2}x + y = 2\right)$

$x + 2y = 4$



19. Graph the equation 3x+6y=18. Identify the intercepts.

x- intercept (6,0)

y- intercept (0,3)

x int

$3x + 6(0) = 18$

$3x = 18$

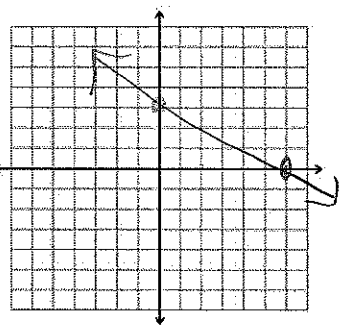
$x = 6$

y int

$3(0) + 6y = 18$

$6y = 18$

$y = 3$



Write definitions of the following in your own words.

20. Adjacent Angles angles that share aside
21. Angle 2 rays with a common endpoint.
22. Bisect to cut into 2 congruent pieces
23. Collinear on the same line
24. Complementary Angles two ∠s whose measures add to 90°
25. Coplanar on the same plane
26. Line a series of points that extends in opposite directions without end
27. Noncollinear not on the same line
28. Noncoplanar not on the same plane
29. Plane - a flat surface
30. Point - location
31. Ray a part of a line that starts at one point and goes in one direction without end.
32. Segment a part of a line consisting of 2 endpoints and all points in between
33. Supplementary Angles two ∠s whose measures add to 180°
34. Vertical Angles two ∠s whose sides are opposite rays