Name: Solutions Date: Period:

Unit 1 Review

Find the length of $\overline{QS}$. Explain how you found your answer.

1. Q — 12 — R — 19 — S

QS = 12+19
= 31

2. Q — S — 47 — R, 59

QS+47=59
−47 −47
QS = 12

Find the coordinates of the midpoint M. Then find the distance between the two points.

3. $A(-4, -8)$ and $B(-1, 4)$ (x_1, y_1) (x_2, y_2) Use Midpoint Formula $M=\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

$X=\frac{-4+-1}{2}=\frac{-5}{2}$ new x-coordinate

$Y=\frac{-8+4}{2}=\frac{-4}{2}=-2$ new y-coordinate

$M\left(\frac{-5}{2}, -2\right)$

$d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$
$=\sqrt{(-1-(-4))^2+(4-(-8))^2}$
$=\sqrt{3^2+12^2}=\sqrt{9+144}=\sqrt{153}$

4. $C(-1, 7)$ and $D(-8, -3)$

$x=\frac{-1+-8}{2}=\frac{-9}{2}$

$y=\frac{7+-3}{2}=\frac{4}{2}=2$

$M\left(\frac{-9}{2}, 2\right)$

$d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$
$=\sqrt{(-1-(-8))^2+(-3-7)^2}$
$=\sqrt{7^2+(-10)^2}$
$=\sqrt{49+100}$
$=\sqrt{149}$

5. The midpoint of $\overline{EF}$ is $M(1, -1)$. One endpoint is $E(-3, 2)$. Find the coordinates of endpoint F.

E(-3,2) M(1,-1) F(x,y) Call 2nd endpoint F(x,y)

$1=\frac{x+(-3)}{2}$ ·2

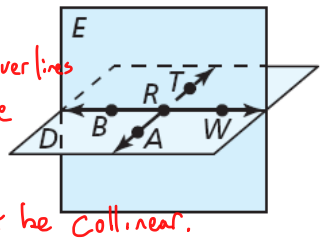
$2=x-3$
+3 +3
$5=x$

$-1=\frac{y+2}{2}$ ·2

$-2=y+2$
−2 −2
$-4=y$

F(5,−4)

Use the diagram to decide whether the statement is true or false.



6. Points A, R, and B are collinear. False, they aren't on the same line
7. $\overleftrightarrow{BW}$ and $\overleftrightarrow{AT}$ are lines. True Remember to put bars and arrows over lines
8. $\overrightarrow{BR}$ and $\overrightarrow{RT}$ are opposite rays. False, they do not go in opposite directions and they have different endpoints
9. Plane D could also be named plane ART. False, you can name a plane with 3 points, but they cannot be collinear.

9.5 Use the drawing for 6-9 to answer these questions:

a) Name a ray that is not named in problems 6-9 Possible answers: $\overrightarrow{RA}$, $\overrightarrow{RW}$, $\overrightarrow{RB}$

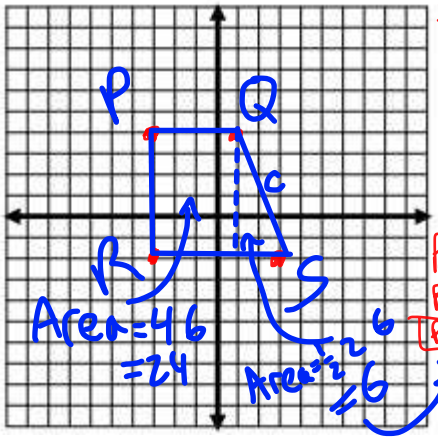
b) Name the intersection of the two planes $\overleftrightarrow{BW}$

c) Name the intersection of $\overleftrightarrow{BW}$ and $\overleftrightarrow{AT}$ Point R

d) Are points A, B, W, T coplanar? Explain why. Yes, they are on the same plane

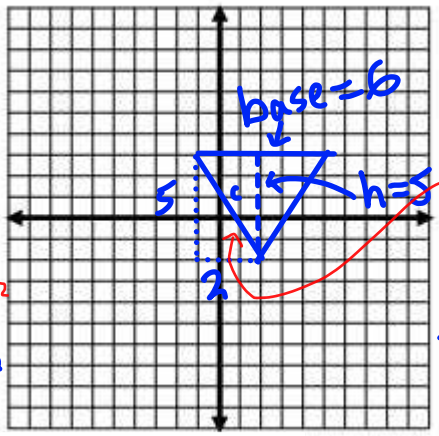
Find the perimeter and area of the polygon with the given vertices. Explain how you found your answer.

10. $P(-3, 4), Q(1, 4), R(-3, -2), S(3, -2)$



Find QS
$2^2+6^2=c^2$
$4+36=c^2$
$40=c^2$
$\sqrt{40}=c$
$6.32=c$
Perimeter
$P=4+6+6+6.32$
$P=22.32$
Total Area
$=6+24$
$=30$

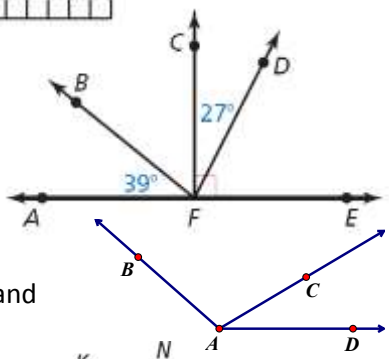
11. $J(-1, 3), K(5, 3), L(2, -2)$



Per. meter
$5^2+3^2=c^2$
$25+9=c^2$
$34=c^2$
$\sqrt{34}=c$
$5.83=c$
$P=5.83+5.83+6=17.66$

Area
$A=\frac{1}{2}\,6\,5=15$

12. In the diagram, $\angle AFE$ is a straight angle and $\angle CFE$ is a right angle. Identify all supplementary and complementary angles. Explain. Then find $m\angle DFE$, $m\angle BFC$, and $m\angle BFE$.



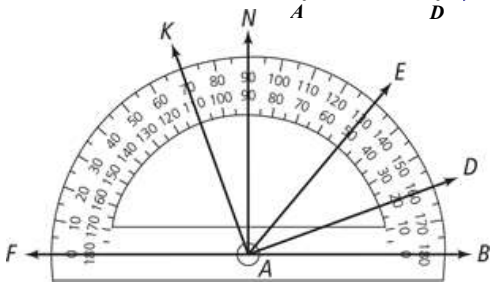
Complementary ∠AFB & ∠BFC, ∠CFD & ∠DFE
Supplementary ∠AFB & ∠BFE; ∠AFC & ∠CFE; ∠AFD & ∠DFE

$m\angle DFE=90-27=63°$ $\angle BFC=90-39=51°$ $\angle BFE=180-39=141°$

13. If $m\angle BAC=(5x+10)°$, $m\angle CAD=(2x+10)°$ $m\angle BAD=160°$, solve for x and find the measure of the angles.

$(5x+10)+(2x+10)=160$
$7x+20=160$
$-20 \quad -20$
$\frac{7x}{7}=\frac{140}{7}$
$x=20$

14. Use the protractor to the right to find the measure of these angles and **classify the angle types**: → Remember to classify as right, acute, or obtuse

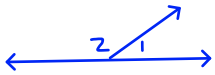


$m\angle BAE=50°$ Acute

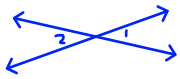
$m\angle DAK=110-20=90°$ Right Angle

15. Draw an example of the following types of angle pairs. Name the angles with a 1 and 2.

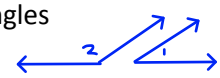
a. Linear Pair



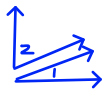
b. Vertical angles



c. Supplementary Angles



d. Complementary Angles



e. Adjacent Angless