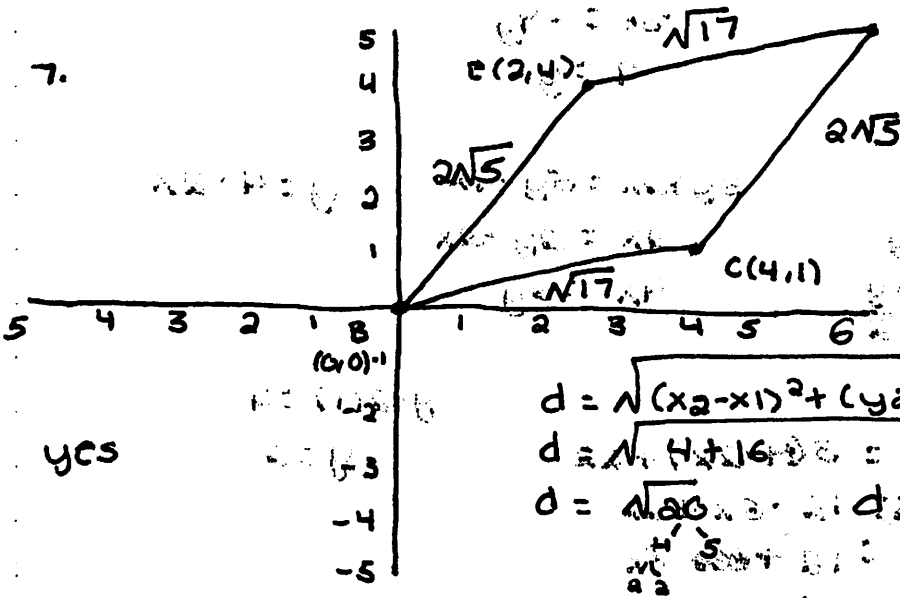
6.3 homework

section 6.3 #'s 7-14, 20-22

7.



$d = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

$d = \sqrt{4+16}$

$d = \sqrt{20}$ $d = 2\sqrt{5}$

$\sqrt{16+1}$

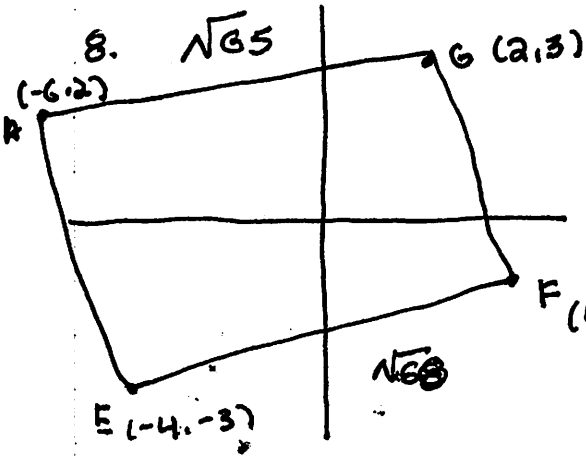
4^2+1

yes

$d = 4+4$

$d = 2\sqrt{5}$

8. $\sqrt{65}$



$8^2 \quad 2^2$

$d = 64+4$

$d = \sqrt{68}$

$d = \sqrt{-8^2+-1^2}$

$d = 64+1$

$d = \sqrt{65}$

no, the opposite sides $\overline{FG}$ and $\overline{EF}$ are not congruent

9. yes, the opposite $\angle$s are $\cong$.

10. yes, the diagonals bisect eachother.

11. yes, the opposite $\angle$s are $\cong$.

12. No, because only one opposite side is $\cong$ not both opposite sides.

13. yes, the opposite sides are congruent and parallel.

14. No, because only one diagonal is bisected and only one opposite side is congruent.

20. $3y = 96-y$ $y = 24$

$4y = 96$

$5x-18 = 3x$ $x = 6$

$-18 = -3x$

21. $2x+3=5x$

$3=3x$

$1=x$

$8y-36=4y$

$-36=-4y$

$9=y$

22. $y+2x=4$

$2x=4-y$

$x=\frac{4-y}{2}$

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

$2x=2y-2x$

$4x=2y$

$y=4-2x$

$5y-2x$

$5(4-2x)-2x=3(4-2x)+2x$

$20-10x-2x=12-6x+2x$

$20=12+8x$

$8=8x$

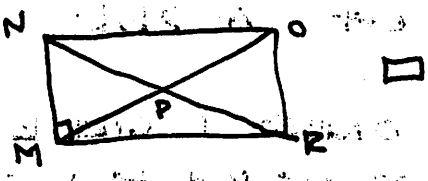
$1=x$

$y+2(1)=4$

$y=2$

6.4 homework

section 6.4 #s 2-22 even, 32

2. 

$NR = 2x+10$

$NP = 2x-30$

$MP = 2x-30$ because NP and MP are $\cong$ diagonals.

4. $3x+11+3x+11+x=180$

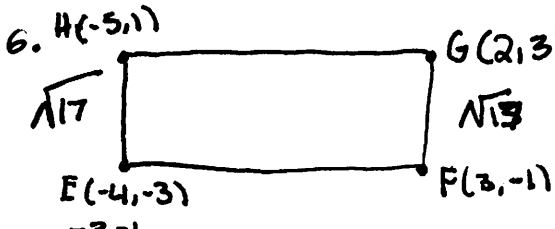
$7x+22=180$

$7x=158$

$x=$

$3x+11+x=90$

$4x=79$

6. 

$d=\sqrt{1^2+4^2}$

$d=\sqrt{17}$

$d=-1^2+4^2$

$d=\sqrt{17}$

$\frac{y_2-y_1}{x_2-x_1}$

$=\frac{3+3}{3-2}=\frac{4}{1}=4$

$\frac{-3-1}{-4+5}=\frac{-4}{1}=-4$

not rectangle because $\overline{GF}$ and $\overline{HE}$ are not parallel.

8. $2x+5=5x-9$

$3=3x-9$

$12=3x$

$4=x$

$JQ=11$

10. $2x-3+x+5=90$

$3x+2=90$

$3x=88$

$x=29$

12. ~~$2x^2+2+14x=90$~~

$16x^2+2x=90$

$16x^2=88$

$x^2=5.5$

$x=\pm\sqrt{5.5}$

14. $m\angle 3=60$

16. $m\angle 5=30$

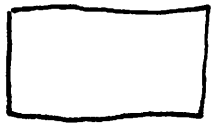
$x^2+7x-44=0$

$(x+11)(x-4)=0$

$x=-11$ $\boxed{x=4}$

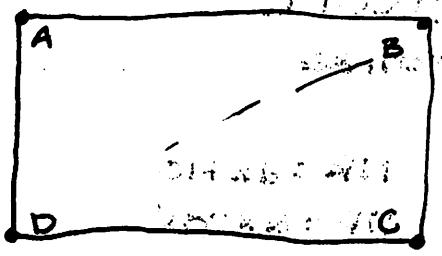
18. $m\angle 7=60$

20. $m\angle 9=60$

22. 

both opposite sides are congruent, and all $\angle$'s are 90. The diagonals are bisected congruent.

32.



Let AC > BD

Stakes L and K must be moved toward D and C to make side AC shorter, making it ≅ to BD

L 10Ft K

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6.6 homework

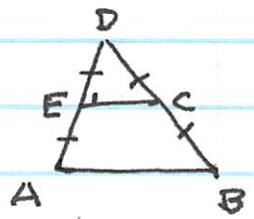
section 6.6 #s 2, 10-12, 20-22

2. Trapezoids, rectangles, rhombi, squares

10.

S	R
$\overline{AD} \cong \overline{DB}$	given
$\overline{DE} \cong \overline{DC}$	def of $\cong$ seg
$\overline{EA} \cong \overline{CB}$	def of midpoint
ABCE isosceles	if legs are $\cong$, then it is an isosceles trapezoid.

$\overline{EC} \parallel \overline{AB}$ if corresponding $\angle$ are $\cong$ the lines are $\parallel$



11. contains all but trapezoids.

12. parallelograms, triangles, rectangles.

20. $m\angle Q \cong 60°$ $m\angle S = 135°$

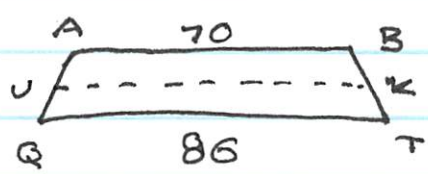
$AB = \frac{1}{2}(12+20)$ $AB = 16$

$= \frac{1}{2}(32)$ $= 16$

21. 62

22. $AB = 140 \div 2 = 70$ $70+86 = 156 \div 2$

$= UK = 78$



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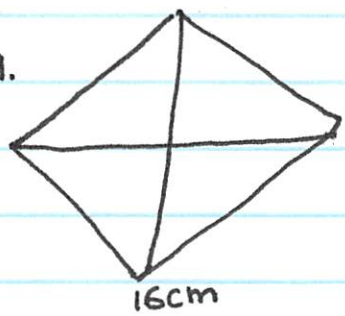
Period 0

10

6.5 homework

section 6.5 #'s 8, 29-35

8.  The measure of the diagonals should also be measured to determine whether the floor is a square. Make sure each angle = 90°

29. 

$6^2 + 8^2 + \_\_ = c^2$

$36 + 64 = c^2$

$100 = c^2$

$10 = c$

the perimeter of the rhombus is 40 cm.

30. ~~never~~ sometimes 31. ~~sometimes~~ always

32. always 33. ~~sometimes~~ never 34. sometimes

35. True. The ∠'s all must measure 90°, and the opposite sides are ≅

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6.5 Homework

Section 6.5 #s 8, 29-35

8. The measure of the diagonals should also be measured to determine whether the floor is a square. Make sure each angle = 90°.

29.

The perimeter of the rhombus is 40 cm.

30. Never 31. sometimes always 32. always 33. sometimes (34. sometimes

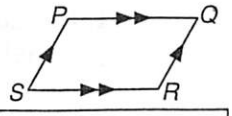
35. True. The legs all must measure 90°, and the opposite sides are =

NAME Brady Rochon DATE 1-14-14 PERIOD 0

6-2 Study Guide and Intervention

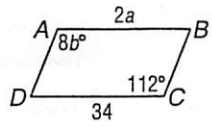
Parallelograms

Sides and Angles of Parallelograms A quadrilateral with both pairs of opposite sides parallel is a **parallelogram**. Here are four important properties of parallelograms.



	If *PQRS* is a parallelogram, then
The opposite sides of a parallelogram are congruent.	$\overline{PQ} \cong \overline{SR}$ and $\overline{PS} \cong \overline{QR}$
The opposite angles of a parallelogram are congruent.	$\angle P \cong \angle R$ and $\angle S \cong \angle Q$
The consecutive angles of a parallelogram are supplementary.	$\angle P$ and $\angle S$ are supplementary; $\angle S$ and $\angle R$ are supplementary; $\angle R$ and $\angle Q$ are supplementary; $\angle Q$ and $\angle P$ are supplementary.
If a parallelogram has one right angle, then it has four right angles.	If $m\angle P = 90$, then $m\angle Q = 90$, $m\angle R = 90$, and $m\angle S = 90$.

Example **If *ABCD* is a parallelogram, find a and b.**



$\overline{AB}$ and $\overline{CD}$ are opposite sides, so $\overline{AB} \cong \overline{CD}$.

$2a = 34$

$a = 17$

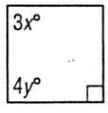
$\angle A$ and $\angle C$ are opposite angles, so $\angle A \cong \angle C$.

$8b = 112$

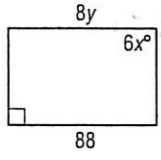
$b = 14$

Exercises

Find x and y in each parallelogram.

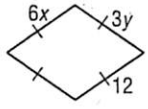
1. 

$3x = 90$
$x = 30$
$4y + 90 = 180$
$4y = 90$
$y = 22.5$

2. 

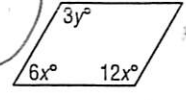
$6x = 90$
$x = 15$

$8y = 88$
$y = 11$

3. 

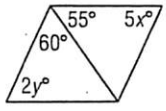
$3y = 12$
$y = 4$

$6x = 12$
$x = 2$

4. 

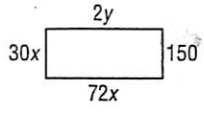
$6x + 12x = 180$
$18x = 180$
$x = 10$

$120 = 3y$
$40 = y$

5. 

$5x + 55 + 60 = 180$
$5x = 65$
$x = 13$

$2y = 65$
$y = 32.5$

6. 

$30x = 150$
$x = 5$

$2y = 360$
$y = 180$

Lesson 6-2

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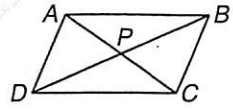
6-2 Study Guide and Intervention *(continued)*

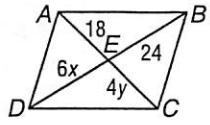
Parallelograms

Diagonals of Parallelograms Two important properties of parallelograms deal with their diagonals.



	If *ABCD* is a parallelogram, then:
The diagonals of a parallelogram bisect each other.	$AP = PC$ and $DP = PB$
Each diagonal separates a parallelogram into two congruent triangles.	$\triangle ACD \cong \triangle CAB$ and $\triangle ADB \cong \triangle CBD$

Example **Find x and y in parallelogram $ABCD$.**



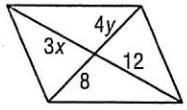
The diagonals bisect each other, so $AE = CE$ and $DE = BE$.

$6x = 24$ $\quad 4y = 18$

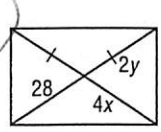
$x = 4$ $\quad y = 4.5$

Exercises

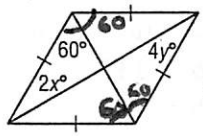
Find x and y in each parallelogram.

1. 

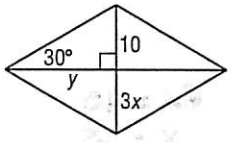
$3x = 12$, $x = 4$; $4y = 8$, $y = 2$

2. 

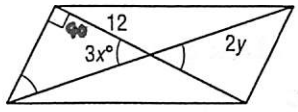
$2y = 28$, $y = 14$; $28 = 4x$, $7 = x$

3. 

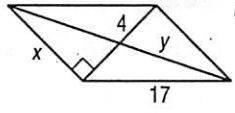
$60 = 4y$, $15 = y$; $60 = 2x$, $30 = x$

4. 

$3x = 10$, $x = 3.3$; $y = 10$

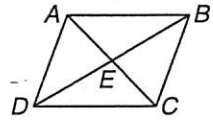
5. 

$90 = 3x \div 2$, $15 = x$; $2y = 12$, $y = 6$

6. 

$4y = 4$, $y = 4$; $x = 17$

Complete each statement about $\square ABCD$. Justify your answer.



7. $\angle BAC \cong$ $\angle BCA$

8. $\overline{DE} \cong$ $\overline{BE}$

9. $\triangle ADC \cong$ $\triangle ABC$

10. $\overline{AD} \parallel$ $\overline{BC}$

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6-1 Study Guide and Intervention

Angles of Polygons

Sum of Measures of Interior Angles The segments that connect the nonconsecutive sides of a polygon are called **diagonals**. Drawing all of the diagonals from one vertex of an ***n*-gon** separates the polygon into $n - 2$ triangles. The sum of the measures of the interior angles of the polygon can be found by adding the measures of the interior angles of those $n - 2$ triangles.

Interior Angle Sum Theorem	If a convex polygon has n sides, and S is the sum of the measures of its interior angles, then $S = 180(n - 2)$.

Example 1 **A convex polygon has 13 sides. Find the sum of the measures of the interior angles.**

$S = 180(n - 2)$
$= 180(13 - 2)$
$= 180(11)$
$= 1980$

Example 2 **The measure of an interior angle of a regular polygon is 120. Find the number of sides.**

The number of sides is n, so the sum of the measures of the interior angles is $120n$.

$S = 180(n - 2)$
$120n = 180(n - 2)$
$120n = 180n - 360$
$-60n = -360$
$n = 6$

Exercises

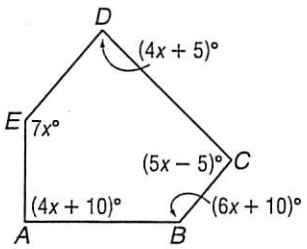
Find the sum of the measures of the interior angles of each convex polygon.

1. 10-gon $S = 180(10-2)$ $S = 1440$
2. 16-gon $S = 180(16-2)$ $= 2520$
3. 30-gon $= 180(30-2)$ $= 5040$
4. 8-gon $S = 180(8-2)$ $S = 1080$
5. 12-gon $S = 180(12-2)$ $S = 1800$
6. $3x$-gon $= 180(3x-2)$ $= 540$ $= 540 - 360$ $= 180$

The measure of an interior angle of a regular polygon is given. Find the number of sides in each polygon.

7. 150 $150n = 180(n-2)$ $180n = 180n - 360$ $0 = 30n - 360$ $360 = 30n$ $12 = n$
8. 160 $160n = 180n - 360$ $0 = 20n - 360$ $360 = 20n$
9. 175 $175n = 180n - 360$ $360 = 5n$ $72 = n$
10. 165 $165n = 180n - 360$ $360 = 15n$ $24 = n$
11. 168.75 $n = 18$ $168.75n = 180n - 360$ $360 = 11.25n$ $32 = n$
12. 135 $135n = 180n - 360$ $360 = 45n$ $8 = n$

13. Find x.



$540 = 4x + 6 + 7x + 4x + 10 + 6x + 10 + 5x$
$540 = 26x + 20$
$520 = 26x$
$20 = x$

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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2-17-14
Period 0

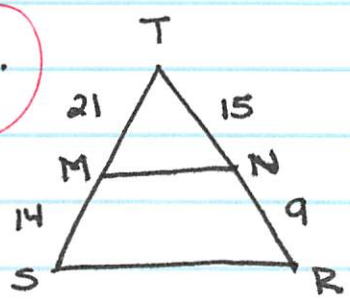
7

Chapter Review

Page 426 #'s 16-19

7-4 : Parallel lines and proportional parts

16.

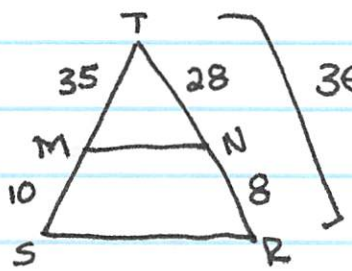


$\frac{15}{21} = \frac{9}{14}$

$210 \neq 189$

no, $\overline{MN}$ is not $\parallel$ to $\overline{SR}$.

17.

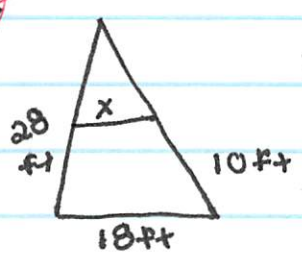


$\frac{28}{35} = \frac{8}{10}$

$280 = 280$

yes, $\overline{MN} \parallel$ to $\overline{SR}$.

18.



$18 \div 2 = x$

~~$9 = x$~~

10.5

7-5: Parts of similar triangles

19.

$\frac{96 \text{ in}}{8 \text{ ft}} \leftarrow \frac{32 \text{ ft}}{384 \text{ in}} \rightarrow \frac{x}{5.25 \text{ in}}$

$\frac{5.25}{96} = \frac{x}{384}$

$96x = 2016$

$x = 21$ inches

$x = 21$ in

Excused absence

Study Ecosystem
9-17-14
Period 6

Chapter Review

Page 456 #5 16-18

7-4 : Parallel lines and Proportional Parts

16.

$\frac{15}{21} = \frac{9}{14}$

210 ≠ 189

No, $\overline{MN}$ is not ∥ to $\overline{SE}$.

17.

$\frac{28}{35} = \frac{8}{10}$

280 = 280

Yes, $\overline{MN}$ ∥ to $\overline{SE}$.

18.

$18 \div 3 = x$

$6 = x$

7-5: Parts of Similar Triangles

19.

$\frac{4}{8+x} = \frac{3+x}{4}$

$16 = 24 + 3x$

$-8 = 3x$

$x = -2.6$ in

X = 9 inches