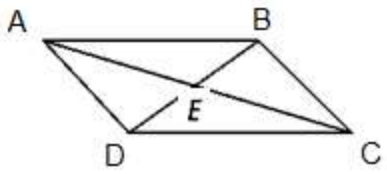
Geometry Homework – 6-2 and 6-3

Name:_____ **Date:**_____ **Block:**_____

Algebra **Find the values for *x* and *y* in ▱*ABCD.***

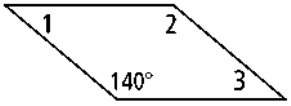


1) $AE = x + 5$, $EC = y$, $DE = 2x + 3$, $EB = y + 2$

2) $AE = 2x$, $EC = y + 4$, $DE = x$, $EB = 2y - 1$

Find the measures of the numbered angles for each parallelogram.

3)



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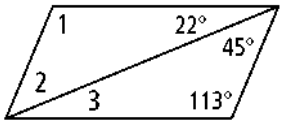

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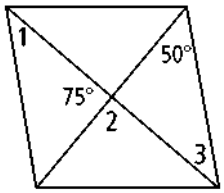
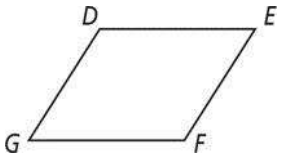


Algebra **Find the values of the variables in ▱*DEFG.***

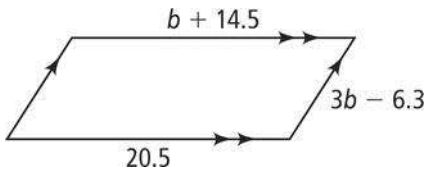
6) $DG = 4a$, $EF = 5a - 6$, $DE = 3a + 2$, $GF = 2a + 8$



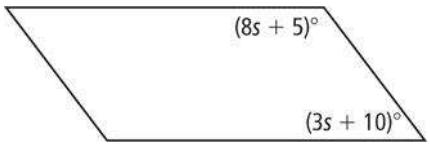
7) $DG = 2r + 3$, $EF = 3r - 3$, $DE = 2r + 6$, $GF = 4r - 6$

Algebra **Find the value of *b* in each parallelogram. Then find each side length or angle measure.**

8)



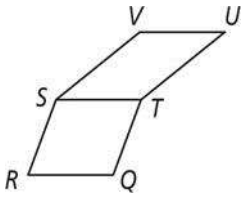
9)



10) **Developing Proof** Complete this two-column proof.

Given: $\square QRST$, $\square TSVU$

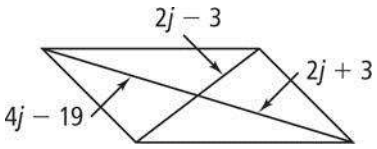
Prove: $\overline{RQ} \cong \overline{VU}$



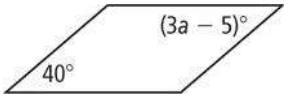
Statements	Reasons
1) $\square QRST$, $\square TSVU$	1) ?
2) $\overline{RQ} \cong \overline{ST}$, ?	2) Theorem 6-3 Opposite sides of $\square$
3) $\overline{RQ} \cong \overline{VU}$	3) ?

Algebra **Find the value of each variable in each parallelogram.**

11)



12)

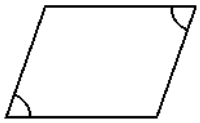


13) The length of one side of a parallelogram is 3 more than twice the length of the adjacent side. The perimeter of the parallelogram is 30 cm. Find the lengths of the two adjacent sides of the parallelogram.

14) **Reasoning** A classmate draws a parallelogram for which one side is twice as long as the other. If one side is 26 units, what are all the possible lengths of the perimeter?

Can you prove that the quadrilateral is a parallelogram based on the given information? Explain.

15)



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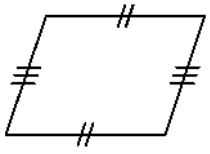

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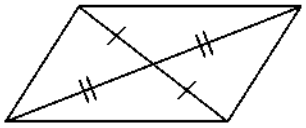

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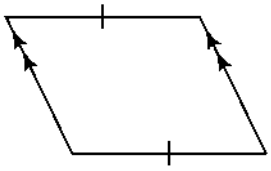
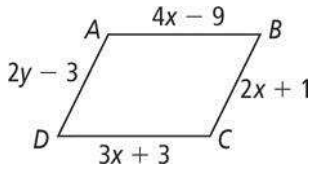


For what values of the variables must *ABCD* be a parallelogram?

19)



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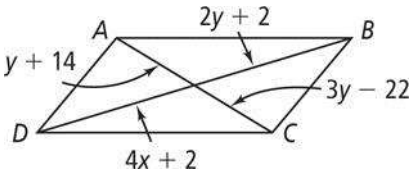
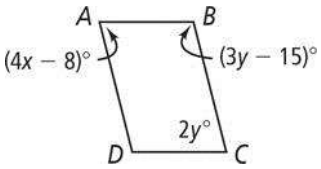


21)



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