





- 10.2.4 | a) Closed with 4 straight sides, so a quadrilateral. b) Yes, closed w/ 4 straight sides.  
 c) No, one ~~straight~~ side is not straight. d) No, not closed.

10.2.6 | a)  is a rhombus, hence also a parallelogram, <sup>not isosceles</sup> trapezoid, and convex. ~~trapezoid~~

b)  is a square, so also a rhombus, parallelogram, rectangle, trapezoid, and convex. (right isosceles)

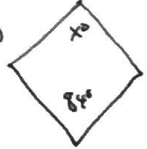
c)  is a rectangle, also a parallelogram, (right isosceles) trapezoid, and convex

d)  is a right trapezoid so also convex.

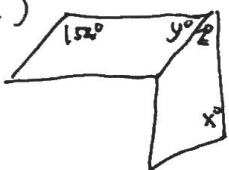
- 10.2.8 | a)  convex b)  concave c)  convex d)  concave

10.2.12 | Let  $x$  be the measure of the missing angle.

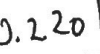

a)  $x + 62 + 95 + 135 = 360 \Rightarrow x = 68^\circ$     b)  $x + 60 + 90 + 90 = 360 \Rightarrow x = 120^\circ$   
 c)  $56^\circ + 67^\circ + 124^\circ + x = 360 \Rightarrow x = 113^\circ$     d)  $x + 60 + 120 + 98 = 360 \Rightarrow x = 82^\circ$

10.2.14 | a)  Opposite angles of a parallelogram are congruent, so  $x = 84^\circ$


b)  Adjacent angles of a parallelogram are supplementary, so  $x = 180^\circ - 127^\circ = 53^\circ$




c)  We know that  $152 + y = 180$ ,  $x + z = 180$ ,  $y + z = 90$ , so  $152 + y + z + x = 360 = 152 + 90 + x$ .  
 Therefore  $y = 28^\circ$ ,  $z = 62^\circ$ ,  $x = 118^\circ$ .

10.2.16 | a) right trapezoid b) rhombus

10.2.20 | a) Sometimes.  is a rhombus,  is not.

b) A square is a right trapezoid. True. Squares have 2 adjacent right angles and at least one pair of parallel sides.

c) True. If two sides are parallel, the remaining sides form interior angles  $< 180^\circ$ .  
 Always = e.g. 

d) Sometimes:   
 yes  no.

10.2.22) a) b) Supplementary. b/c:



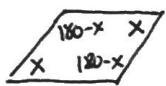
angle sum is  $360^\circ$  and 2 angles are right.

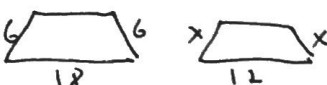
c) Cut up & rearrange parallelogram.

10.2.28) 3, as long as ~~all~~ not all of them are  $> 120^\circ$ .

10.2.30) Yes. A rhombus is a parallelogram, so its opposite angles are congruent.

If we know one angle is  $x^\circ$ , the opposite angle is also  $x^\circ$  and the remaining are each  $\frac{360 - x - x}{2} = (180 - x)^\circ$ .



10.2.34)  Both legs are 6 & 6,  $x$  &  $x$  in the respective trapezoids.

Then the ratios  $\frac{x}{6} = \frac{12}{18}$ , so  $x = 6 \cdot \frac{12}{18} = 6 \cdot \frac{2}{3} = 4$ .

10.2.36) Not all quadrilaterals have congruent opposite angles. Use the fact that the angle measures sum to  $360^\circ$  to get  $x = 60^\circ$ .