

Chapter 7 Exam Review

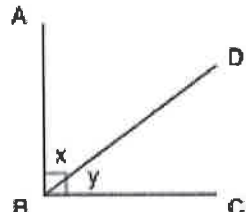
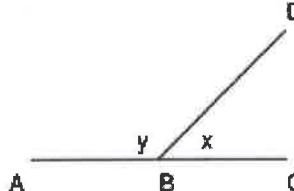
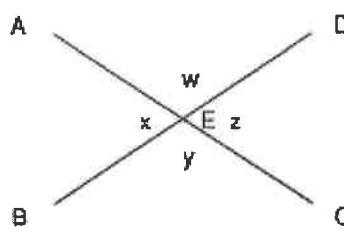
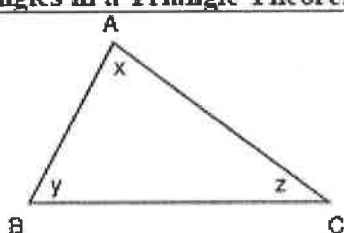
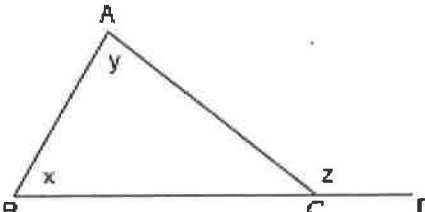
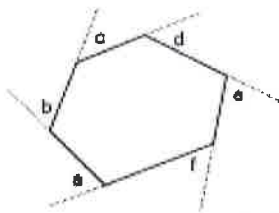
MPM1D

Jensen

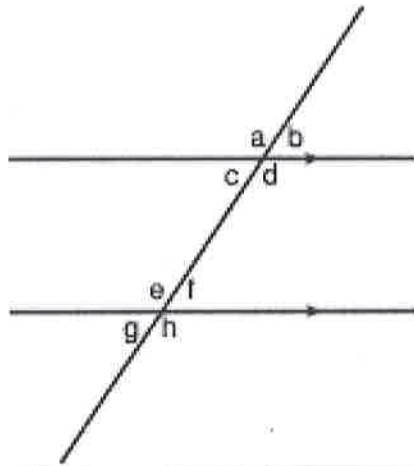
ANSWERS

Section 1: Angle Theorems

1. Fill in the blanks

<p><u>Complementary Angles (CA)</u></p>  <p>If $AB \perp BC$ then $x + y = 90^\circ$</p>	<p><u>Supplementary Angles (SA)</u></p>  <p>If $\angle ABC$ is a <u>straight line</u> then $y + x = 180$</p>
<p><u>Opposite Angle Theorem (OAT)</u></p>  <p>If AC and BD are line segments intersecting at E, then $x = z$ and $w = y$</p>	<p><u>Sum of Angles in a Triangle Theorem (SATT)</u></p>  <p>In any triangle <u>the interior angles add to 180</u> that is: $x + y + z = 180$</p>
<p><u>Exterior Angle Theorem (EAT)</u></p>  <p>If $\angle ACD$ is an <u>exterior angle</u> then $x + y = z$</p>	<p><u>Sum of Exterior Angles Theorem (SEAT)</u></p>  <p>In any polygon, the sum of all exterior angles (one per vertex) is always equal to <u>360</u>. In the example above $a + b + c + d + e + f = 360$</p>
<p><u>Sum of Angles in a Polygon Theorem (SAPT)</u></p> <p>In an n-sided polygon (n-gon), the sum of the interior angles is given by <u>$180(n-2)$</u></p>	

2. Fill in the blanks on the following diagram

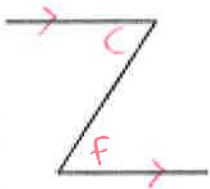


In each diagram below:

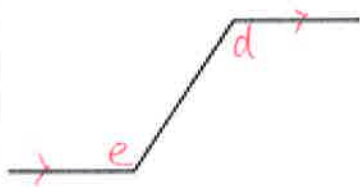
- ① Mark the parallel lines.
- ② Mark the letters of the angles which make the pattern.
- ③ Complete the equation using the same two letters as in the diagram.

PLT - Z

(Alternate Angles)



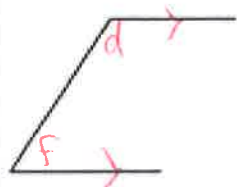
$$\underline{c} = \underline{f}$$



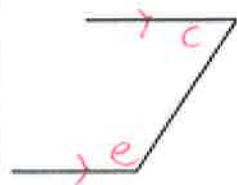
$$\underline{e} = \underline{d}$$

PLT - C

(Co-Interior Angles)



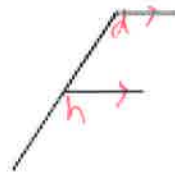
$$\underline{d} + \underline{f} = 180^\circ$$



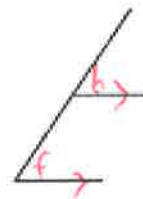
$$\underline{c} + \underline{e} = 180^\circ$$

PLT - F

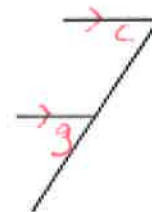
(Corresponding Angles)



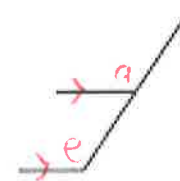
$$\underline{d} = \underline{h}$$



$$\underline{b} = \underline{f}$$



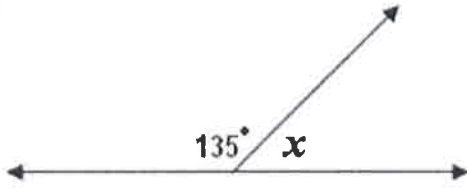
$$\underline{c} = \underline{g}$$



$$\underline{a} = \underline{e}$$

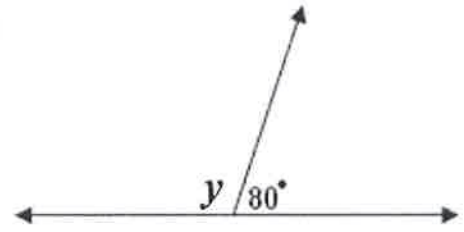
3. Find the missing angle measures in each diagram

a)



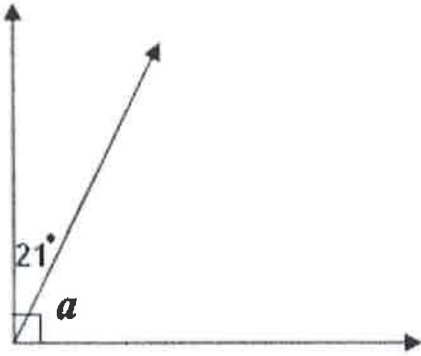
$$x = 180 - 135 \\ = 45^\circ$$

b)



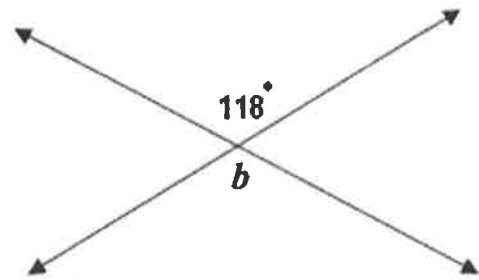
$$y = 180 - 80 \\ = 100^\circ$$

c)



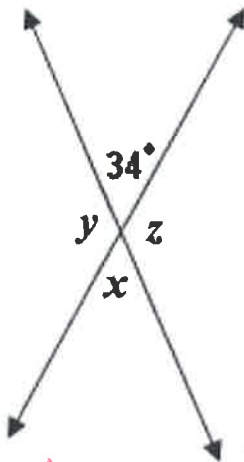
$$a = 90 - 21 \\ = 69^\circ$$

d)



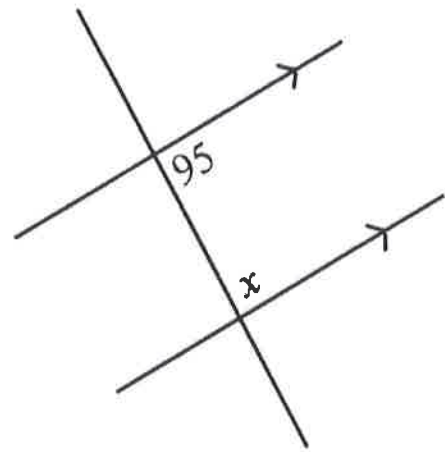
$$b = 118^\circ$$

e)



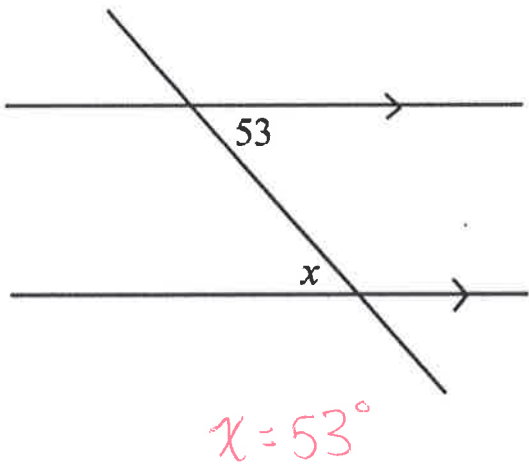
$$x = 34^\circ \\ y = 180 - 34 = 146^\circ \\ z = 146^\circ$$

f)

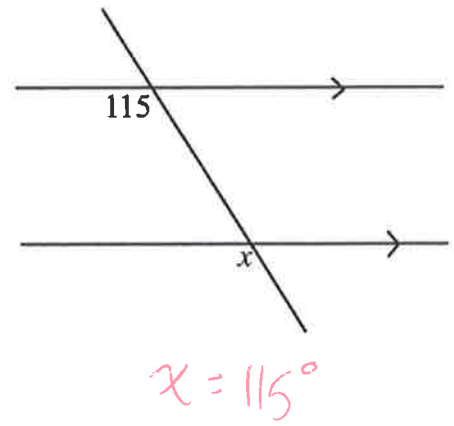


$$x = 180 - 95 = 85^\circ$$

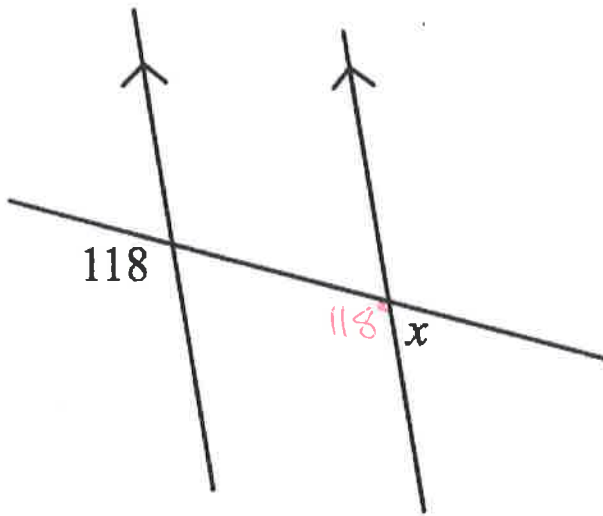
g)



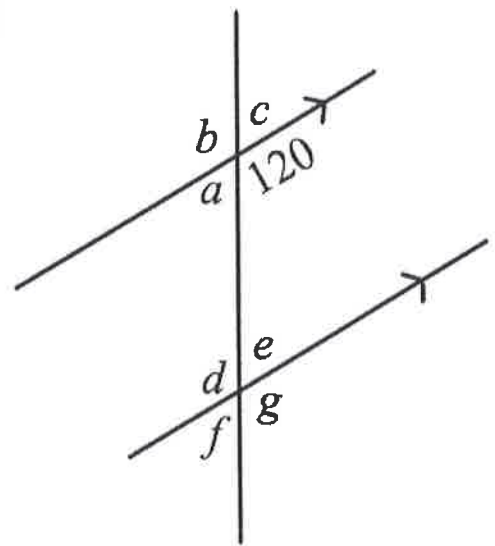
h)



i)



j)



$$a = 180 - 120 = 60^\circ$$

$$b = 120^\circ$$

$$c = 60^\circ$$

$$d = 120^\circ$$

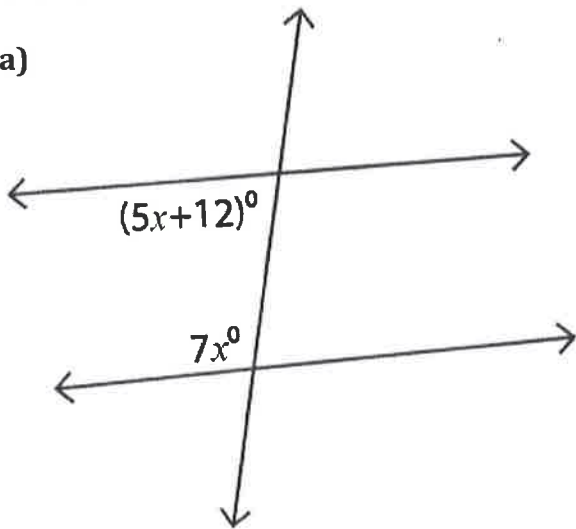
$$e = 60^\circ$$

$$f = 60^\circ$$

$$g = 120^\circ$$

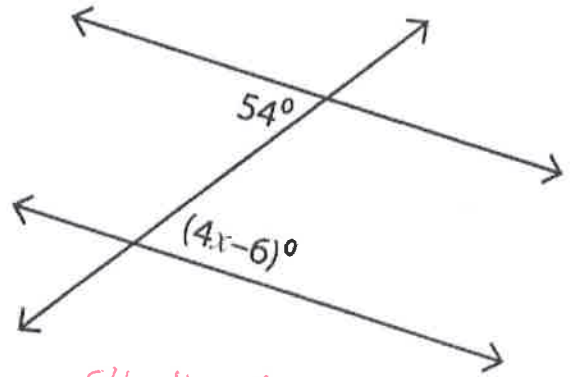
4. Solve for x

a)



$$\begin{aligned}5x + 12 + 7x &= 180 \\12x &= 168 \\x &= 14\end{aligned}$$

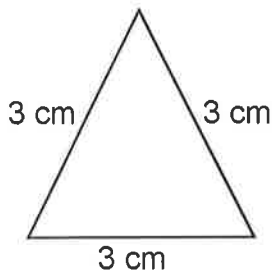
b)



$$\begin{aligned}54 &= 4x - 6 \\60 &= 4x \\x &= 15\end{aligned}$$

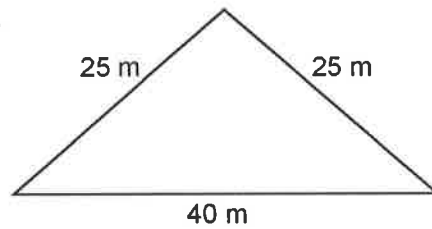
5. Classify each triangle according to its side lengths.

a)



equilateral

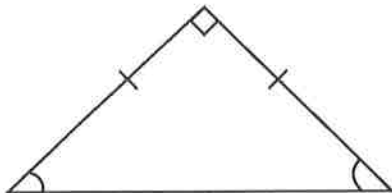
b)



isosceles

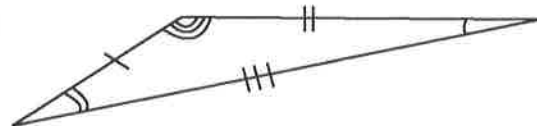
6. Classify each triangle according to its side lengths and angle measures.

a)



isosceles
right triangle

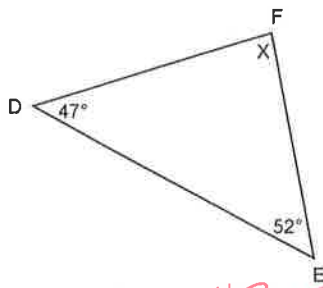
b)



scalene
obtuse triangle

7. Find the measure of the indicated angles

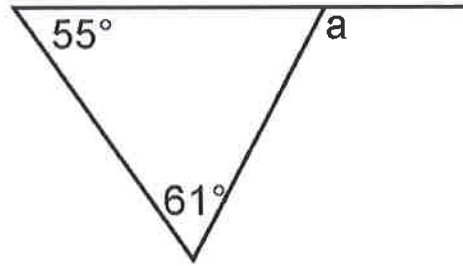
a)



$$x = 180 - 47 - 52$$

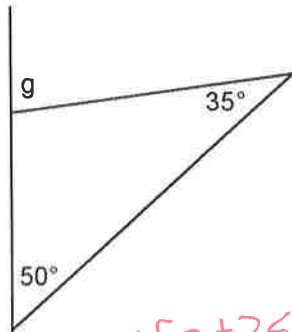
$$x = 81^\circ$$

b)



$$a = 55 + 61 = 116^\circ$$

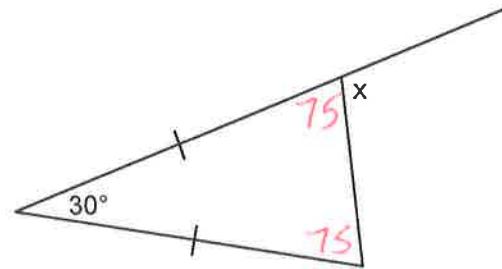
c)



$$g = 50 + 35$$

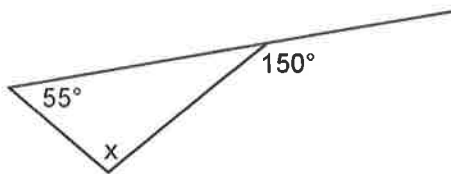
$$g = 85^\circ$$

d)



$$x = 180 - 75 = 105^\circ$$

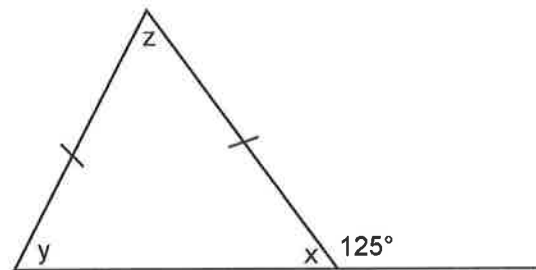
e)



$$x + 55 = 150$$

$$x = 95^\circ$$

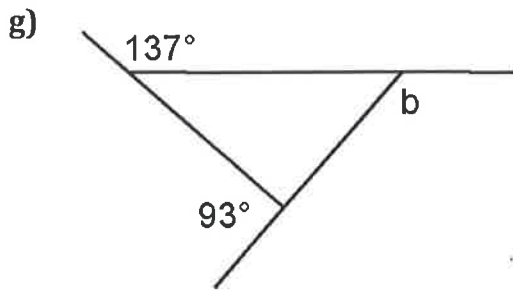
f)



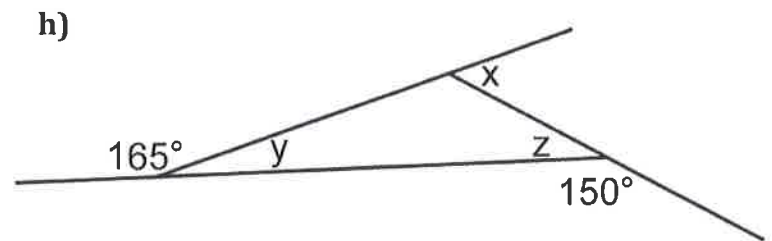
$$x = 180 - 125 = 55^\circ$$

$$y = 55^\circ$$

$$z = 180 - 55 - 55 = 70^\circ$$



$$b = 360 - 93 - 137 = 130^\circ$$



$$x = 360 - 150 - 165 = 45^\circ$$

$$y = 180 - 165 = 15^\circ$$

$$z = 180 - 150 = 30^\circ$$

Answers

1) & 2) See posted solutions

3) a) $x = 45^\circ$ b) $y = 100^\circ$ c) $a = 69^\circ$ d) $b = 118^\circ$ e) $x = 34^\circ, y = 146^\circ, z = 146^\circ$ f) $x = 85^\circ$

g) $x = 53^\circ$ h) $x = 115^\circ$ i) $x = 62^\circ$ j) $a = 60^\circ, b = 120^\circ, c = 60^\circ, d = 120^\circ, e = 60^\circ, f = 60^\circ, g = 120^\circ$

4) a) $x = 14$ b) $x = 15$

5) a) equilateral b) isosceles

6) a) isosceles, right triangle b) scalene, obtuse triangle

7) a) $x = 81^\circ$ b) $a = 116^\circ$ c) $g = 85^\circ$ d) $x = 105^\circ$ e) $x = 95^\circ$ f) $x = 55^\circ, y = 55^\circ, z = 70^\circ$

g) $b = 130^\circ$ h) $z = 30^\circ, y = 15^\circ, x = 45^\circ$