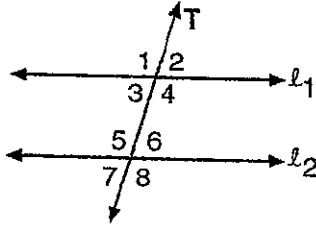


Name: Key
 Parallell Lines

Questions 1 through 4 refer to the following:



1) $\angle 1$ and $\angle 5$ can be classified as

A) alternate interior angles

B) corresponding angles

C) interior angles on the same side of the transversal

D) none of these

2) $\angle 3$ and $\angle 7$ can be classified as

A) alternate interior angles

B) corresponding angles

C) interior angles on the same side of the transversal

D) none of these

3) $\angle 4$ and $\angle 5$ can be classified as

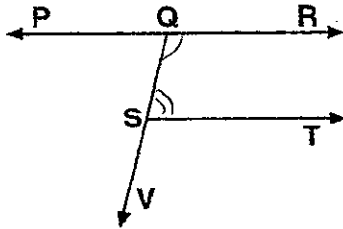
A) alternate interior angles

B) corresponding angles

C) interior angles on the same side as the transversal

D) none of these

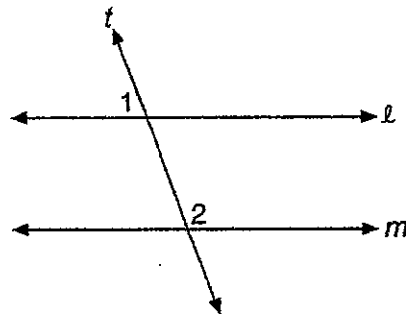
- 4) $\angle 3$ and $\angle 5$ can be classified as
- A) alternate interior angles
 B) corresponding angles
 C) interior angles on same side of transversal
 D) none of these



From the given figure, name a pair of interior angles on the same side of the transversal.

$$\angle RQS + \angle QST = 180$$

- 6) In the accompanying diagram, parallel lines l and m are cut by transversal t .

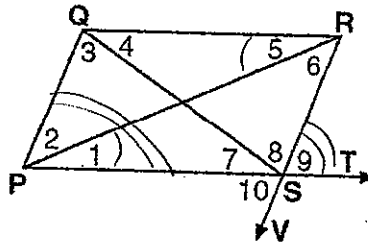


Which statement about angles 1 and 2 must be true?

- A) $\angle 1$ is a complement to $\angle 2$
 B) $\angle 1$ and $\angle 2$ are right angles
 C) $\angle 1 \cong \angle 2$
 D) $\angle 1$ is a supplement to $\angle 2$

Questions 7 and 8 refer to the following:

In the diagram below, $\overline{PQ} \parallel \overline{RS}$ and $\overline{QR} \parallel \overline{PS}$.



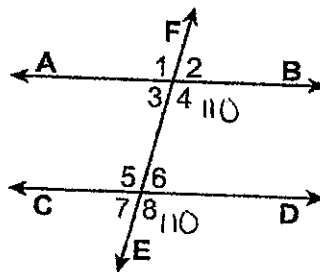
7) What is an angle congruent to $\angle 5$?

- C A) $\angle 2$ B) $\angle 6$ C) $\angle 1$ D) $\angle 3$

8) What is an angle congruent to $\angle 9$?

- A A) $\angle QPS$ B) $\angle 2$ C) $\angle QRV$ D) $\angle 7$

9) In the diagram below, $\overline{AB} \parallel \overline{CD}$.



$180 - 110 = 70$

B

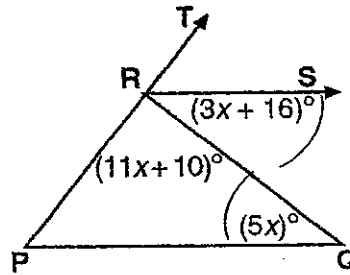
If $m\angle 8 = 110^\circ$, what is $m\angle 2$?

- A) 20° B) 70° C) 180° D) 110°

Name: _____

Parallel lines: algebra problems classwork ditto

- 1) In the figure below,
- $\overline{RS} \parallel \overline{PQ}$
- .

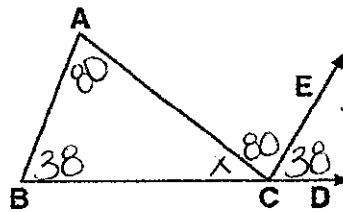
Find the value of x .

$$3x + 16 = 5x$$

$$16 = 2x$$

$$\boxed{8 = x}$$

- 2) In the diagram below,
- $\overline{AB} \parallel \overline{CE}$
- .

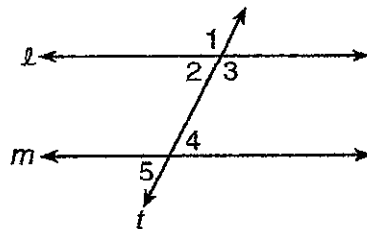
If $m\angle B = 38^\circ$ and $m\angle ACE = 80^\circ$, find $m\angle ACB$.

$$x + 80 + 38 = 180$$

$$x + 118 = 180$$

$$\boxed{x = 62}$$

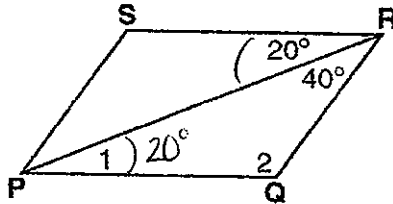
- 3) In the accompanying diagram, parallel lines
- l
- and
- m
- are cut by transversal
- t
- .



Which statement is true?

- A) $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$
- B) $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$
- C) $m\angle 1 + m\angle 2 + m\angle 5 = 360^\circ$
- D) $m\angle 1 + m\angle 3 = m\angle 4 + m\angle 5$

- 4) Two parallel lines are cut by a transversal. One of two interior angles on the same side of the transversal is 20° more than the other. Find the measure of the *larger* angle.
- 5) If $\overline{PQ} \parallel \overline{SR}$ and $\overline{PS} \parallel \overline{QR}$, find $m\angle 1$ and $m\angle 2$.

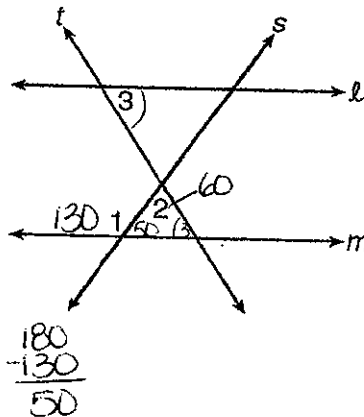


$$20 + X + 40 = 180$$

$$X + 60 = 180$$

$$\boxed{X = 120}$$

- 6) In the accompanying diagram, $l \parallel m$, t and s are intersecting transversals, $m\angle 1 = 130^\circ$, and $m\angle 2 = 60^\circ$.



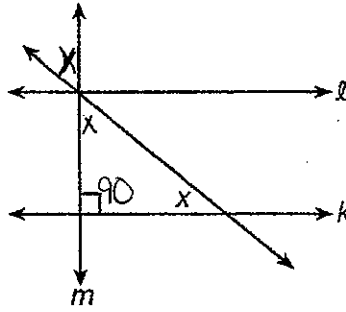
Find $m\angle 3$.

$$60 + 50 + X = 180$$

$$110 + X = 180$$

$$\boxed{X = 70}$$

- 7) In the accompanying diagram, line l is parallel to line k , line $m \perp$ line k , and $m\angle x = m\angle y$.



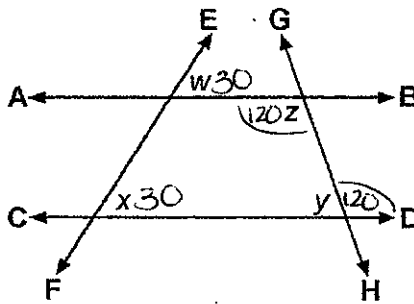
Find $m\angle x$.

$$2x + 90 = 180$$

$$2x = 90$$

$$\boxed{x = 45}$$

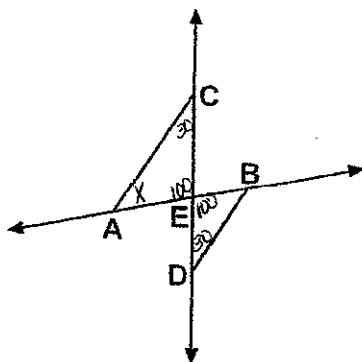
- 8) In the accompanying diagram, \overline{AB} , \overline{CD} , \overline{EF} , and \overline{GH} are straight lines.



If $m\angle w = 30^\circ$, $m\angle x = 30^\circ$, and $m\angle z = 120^\circ$, find $m\angle y$.

$$\begin{array}{r} 180 \\ -120 \\ \hline 60 \end{array}$$

- 9) As shown in the accompanying diagram, \overline{AB} and \overline{CD} intersect at point E, and \overline{CA} and \overline{BD} are drawn.



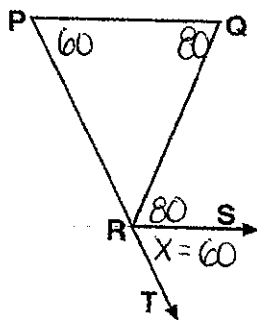
$$X + 30 + 100 = 180$$

$$X + 130 = 180$$

$$\boxed{X = 50}$$

If $\overline{CA} \parallel \overline{BD}$, $m\angle DEB = 100^\circ$, and $m\angle BDE = 30^\circ$, find $m\angle CAE$.

- 10) In the diagram below, $\overline{PQ} \parallel \overline{RS}$.



$\angle P + \angle SRT$ are corresponding

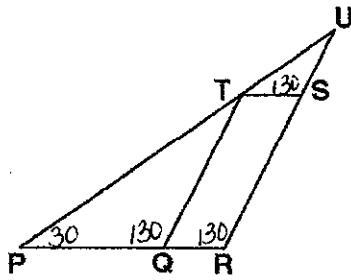
$$80 + 60 = \boxed{140}$$

If $m\angle P = 60^\circ$ and $m\angle Q = 80^\circ$, find $m\angle QRT$.

Name: _____

Parallel lines: algebra problems

1)



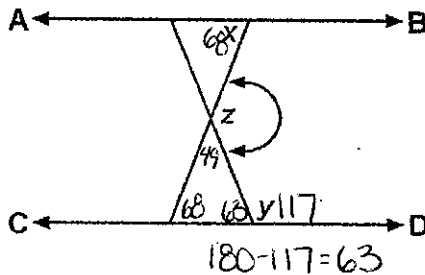
Given: $\overline{TQ} \parallel \overline{SR}$
 $\overline{TS} \parallel \overline{QR}$
 $m\angle UST = 130^\circ$
 $m\angle P = 30^\circ$

$\angle PQT + \angle SRP$ are corresponding

What is the measure of $m\angle PQT$?

- A) 70° B) 150° C) 30° **D) 130°**

2) In the diagram below, $\overline{AB} \parallel \overline{CD}$, $m\angle x = 68^\circ$, and $m\angle y = 117^\circ$.



$$68 + 63 + x = 180$$

$$131 + x = 180$$

$$x = 49$$

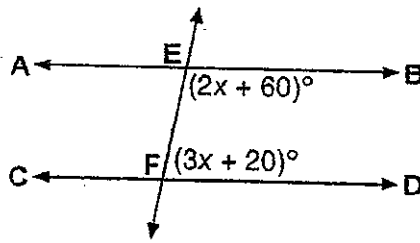
$$z + 49 = 180$$

$z = 131$

What is $m\angle z$?

- A) 112° B) 49° C) 117° **D) 131°**

- 3) In the accompanying diagram, \overline{AB} is parallel to \overline{CD} , and \overline{EF} is a transversal.



$$2x + 60 + 3x + 20 = 180$$

$$5x + 80 = 180$$

$$5x = 100$$

$$x = 20$$

If $m\angle BEF = (2x + 60)^\circ$ and $m\angle DFE = (3x + 20)^\circ$, what is $m\angle BEF$?

A) 20°

B) 40°

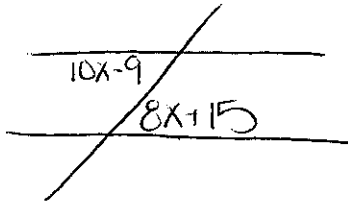
C) 100°

$$2(20) + 60$$

$$40 + 60 = \boxed{100}$$

D) 140°

- 4) Two parallel lines are cut by a transversal. The measures of two alternate interior angles are represented by $10x - 9$ and $8x + 15$. Find the value of x .

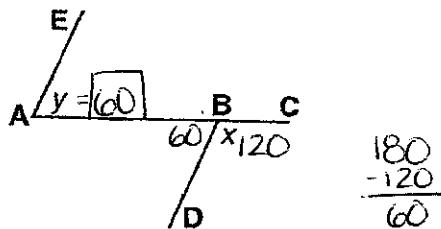


$$10x - 9 = 8x + 15$$

$$2x = 24$$

$$\boxed{x = 12}$$

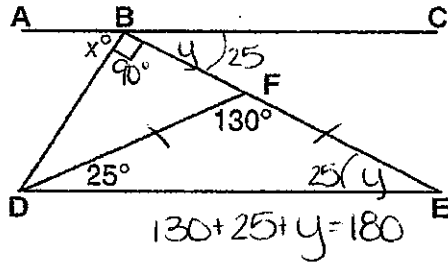
- 5) In the diagram below, $\overline{AE} \parallel \overline{BD}$.



$$\begin{array}{r} 180 \\ -120 \\ \hline 60 \end{array}$$

If $x = 120^\circ$, find y .

- 6) In the accompanying diagram, $\overline{ABC} \parallel \overline{DE}$, $m\angle FDE = 25^\circ$, $m\angle DFE = 130^\circ$, and $m\angle ABD = x^\circ$.



What is the value of x ?

$$130 + 25 + y = 180$$

$$155 + y = 180$$

$$y = 25$$

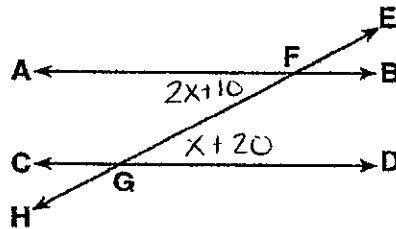
$$x + 90 + y = 180$$

$$x + 90 + 25 = 180$$

$$x + 115 = 180$$

$$\boxed{x = 65}$$

- 7) In the accompanying diagram, \overline{AB} is parallel to \overline{CD} , and transversal \overline{EH} intersects \overline{AB} and \overline{CD} at F and G , respectively.



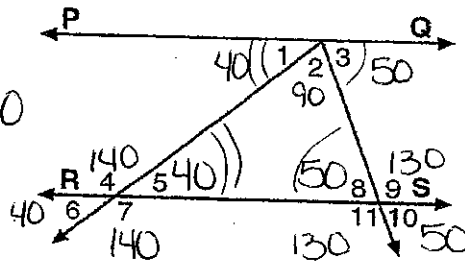
If $m\angle AFG = (2x + 10)^\circ$ and $m\angle FGD = (x + 20)^\circ$, find the value of x .

$$2x + 10 = x + 20$$

$$\boxed{x = 10}$$

10)

$$180 - 40 = 140$$



$$\begin{aligned} X + 40 + 50 &= 180 \\ X + 90 &= 180 \\ X &= 90 \end{aligned}$$

$$180 - 50 = 130$$

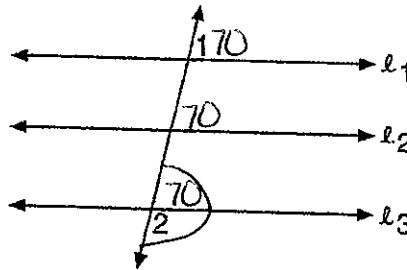
If $\overline{PQ} \parallel \overline{RS}$, $m\angle 5 = 40^\circ$, and $m\angle 8 = 50^\circ$, find the measures of the remaining angles in the given figure.

$\angle 4, \angle 7 = 140^\circ$
$\angle 5, \angle 6, \angle 1 = 40^\circ$

$\angle 3, \angle 8, \angle 10 = 50$
$\angle 9, \angle 11 = 130$

$\angle 2 = 90$

11) In the accompanying diagram, $l_1 \parallel l_2 \parallel l_3$.

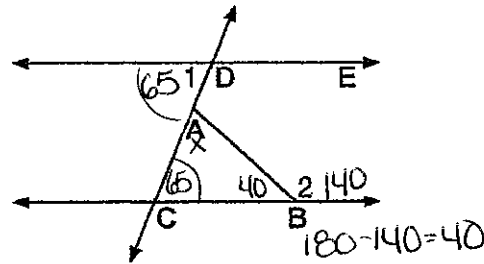


If $m\angle 1 = 70^\circ$, find $m\angle 2$.

$$X + 70 = 180$$

$X = 110$

- 12) In the accompanying diagram, $\overline{DE} \parallel \overline{CB}$ and \overline{CD} is a transversal.



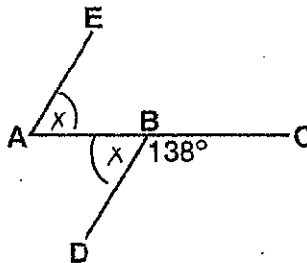
If $m\angle 1 = 65^\circ$ and $m\angle 2 = 140^\circ$, find $m\angle CAB$.

$$X + 65 + 40 = 180$$

$$X + 105 = 180$$

$$\boxed{X = 75}$$

- 13) In the accompanying diagram, \overline{ABC} , $m\angle DBC = 138^\circ$, and $\overline{AE} \parallel \overline{DB}$.



Find $m\angle EAB$.

$$X + 138 = 180$$

$$\boxed{X = 42}$$