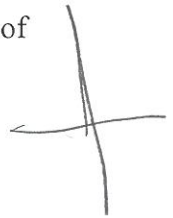


9.5.10
10
The intent of these exercises is to assess your knowledge perpendicular lines and ability to use that knowledge to solve problems.

1. Suppose two segments are perpendicular, what is implied about the angle of intersection between these two segments.

e The angle would be 90° .



2. In the following illustration, segments MA and AT are perpendicular. Find the measure of angle CAT.

e

$\angle CAT = 58^\circ$

$90 - 32 = 58$

$9 \times 5.3 + 10 = 58$

$90 - 32 = 9x + 10$

$58 = 9x + 10$

-10

$48 = 9x$

$\div 9$

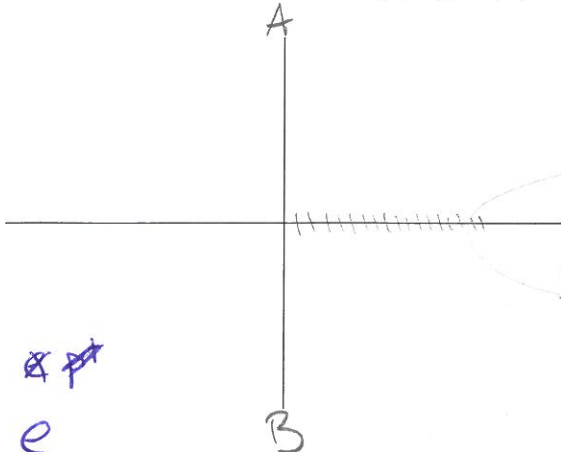
$x = 5.3$

3. Determine whether each pair of lines is perpendicular or not. Justify

- a.) line AB where A:(4, 12), B:(6, 9)
line CD where C:(5, 8), C:(3, 11)

$\frac{12-9}{4-6} = \frac{3}{-2} AB$

$\frac{8-11}{5-3} = \frac{-3}{2}$



No, the slopes when multiplied together, do not equal -1 .

$-\frac{3}{2} \times \frac{3}{-2} = \frac{+9}{+4}$

$\neq -1$

- b.) line AB defined by $y = 3x + 7$
line CD defined by $x + 3y = 12$

(0,7)

If $x + 3y = 12$, then $\frac{1}{3}x + y = 4$.

No, the product of the slopes does not equal -1 .

$x + y = 4$

$y = -x + 4$

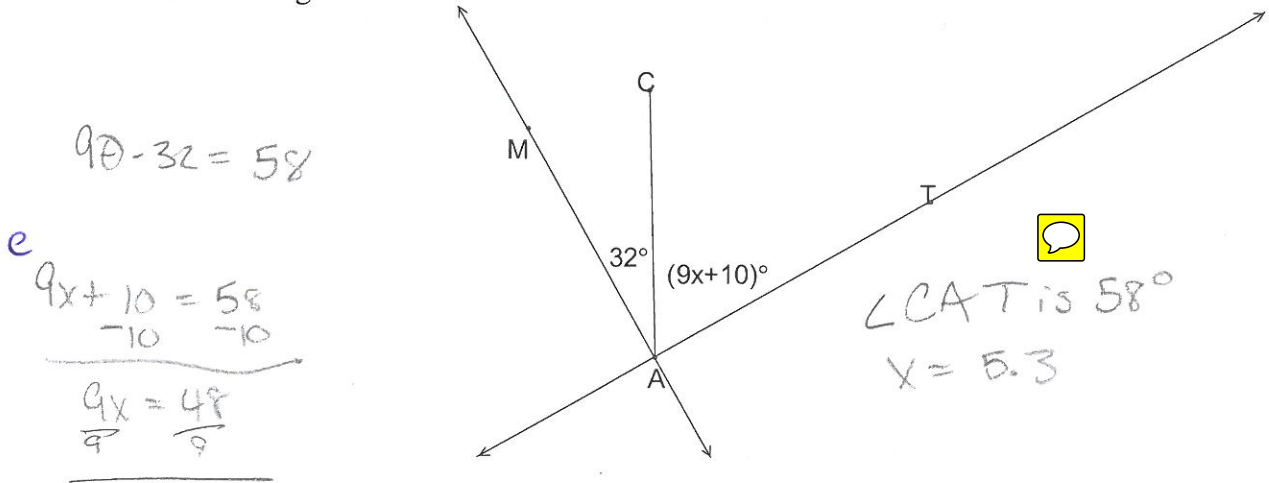
$-\frac{1}{1} \times \frac{3}{1} = \frac{-3}{1}$

8 The intent of these exercises is to assess your knowledge perpendicular lines and ability to use that knowledge to solve problems.

1. Suppose two segments are perpendicular, what is implied about the angle of intersection between these two segments.

e The angle is 90° if they are perpendicular.

2. In the following illustration, segments MA and AT are perpendicular. Find the measure of angle CAT.



$$90 - 32 = 58$$

e

$$\begin{array}{r} 9x + 10 = 58 \\ -10 \quad -10 \\ \hline 9x = 48 \\ \frac{9x}{9} = \frac{48}{9} \end{array}$$

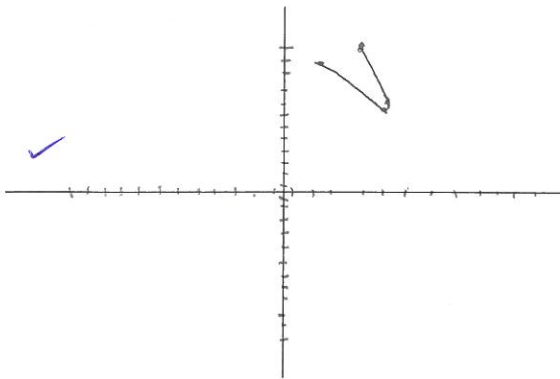
$$x = 5.3$$

angle CAT is 58°

$$x = 5.3$$

3. Determine whether each pair of lines is perpendicular or not. Justify

- a.) line AB where A:(4, 12), B:(6, 9)
line CD where C:(5, 8), C:(3, 11)



The lines are not perpendicular because the angle measure is acute which is less than 90°



- b.) line AB defined by $y = 3x + 7$
line CD defined by $x + 3y = 12$

x

$$x - 12 = 3y$$

$$90 = 3x + 7 + x - 12$$

$$\begin{array}{r} 90 = 4x - 5 \\ +5 \quad +5 \\ \hline 95 = 4x \end{array}$$

$$\frac{95}{4} = \frac{4x}{4}$$

$$23.75 = x$$

NO?

If there is a right angle, they will all be right angles

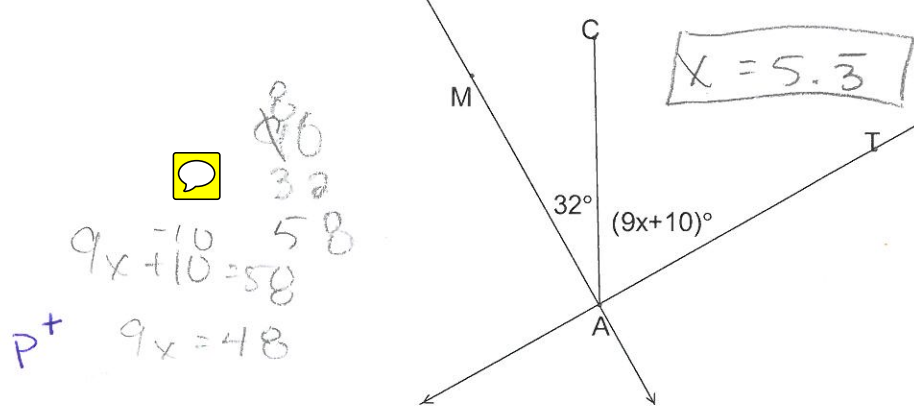
The intent of these exercises is to assess your knowledge perpendicular lines and ability to use that knowledge to solve problems.

- Suppose two segments are perpendicular, what is implied about the angle of intersection between these two segments. *The angle of intersection between both segments are going to be corresponding. They will be congruent if they are on the same side of the line. There will be a right angle.*
- In the following illustration, segments MA and AT are perpendicular. Find the measure of angle CAT. *a right angle.*

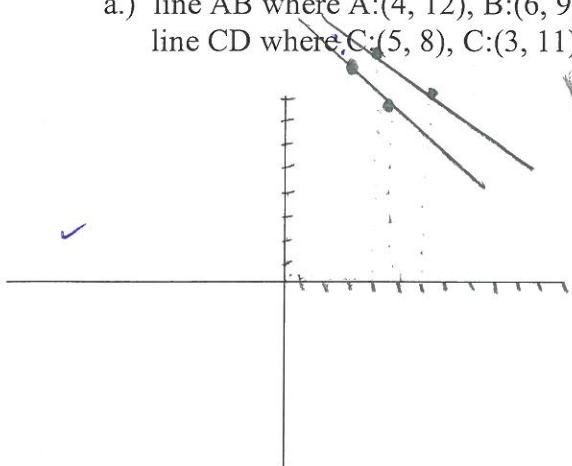


e

measure of angle CAT.



- Determine whether each pair of lines is perpendicular or not. Justify
 - line AB where A:(4, 12), B:(6, 9)
line CD where C:(5, 8), C:(3, 11)



No. They are not perpendicular because the lines do not cross or meet they are parallel.

- line AB defined by $y = 3x + 7$
line CD defined by $x + 3y = 12$

$$x + 3(3x + 7) = 12$$

$$x + 9x + 21 = 12$$