

P-12 For each pair of equations, determine whether the lines they represent are the same, parallel or intersecting.

1. $y = 3x + 2$ and $y = 3x - 5$
different
same

parallel

2. $y = 2x + 1$ and $y = x + 1$
different slopes

intersecting

3. $y = 7x - 2$ and $y = 7$
 $y = 0x + 7$
different

intersecting

4. $x + y = 1$ and $x - y = 1$
not a multiple
intersecting

5. $x - 2y = 3$ and $2x - 4y = 6$
multiply by 2

same

6. $2x + 3y = 12$ and $4x + 6y = 12$
!
parallel

Find the intersection point of each of the following pairs of lines. Make a sketch for each problem.

7. $y = 5x - 3$ and $y = 2$

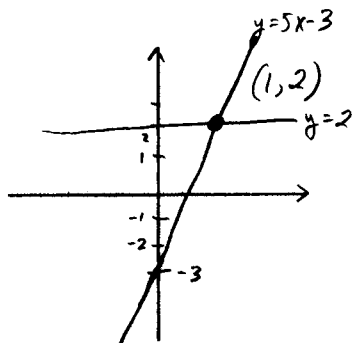
$$2 = 5x - 3$$

$$5 = 5x$$

$$1 = x$$

and $y = 2$ so

intersection point
is $(1, 2)$



9. $3x - y = 6$ and $y = -3$

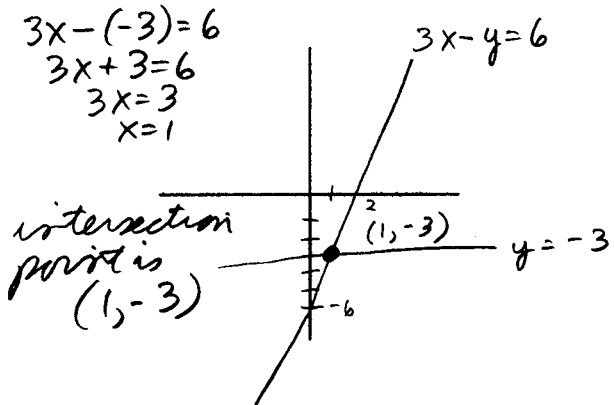
$$3x - (-3) = 6$$

$$3x + 3 = 6$$

$$3x = 3$$

$$x = 1$$

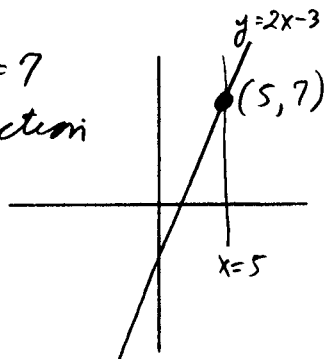
intersection
point is
 $(1, -3)$



8. $y = 2x - 3$ and $x = 5$

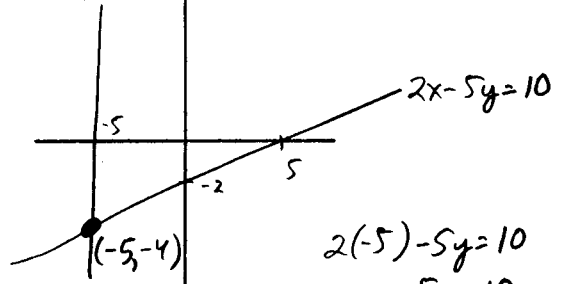
$$y = 2 \cdot 5 - 3 = 10 - 3 = 7$$

and $x = 5$ so intersection
point is $(5, 7)$



10. $2x - 5y = 10$ and $x = -5$

$$x = -5$$



intersection point
is $(-5, -4)$

$$2(-5) - 5y = 10$$

$$-10 - 5y = 10$$

$$-5y = 20$$

$$y = -4$$