Construct the distance that represents the given information.

1. B to $\overleftrightarrow{AC}$
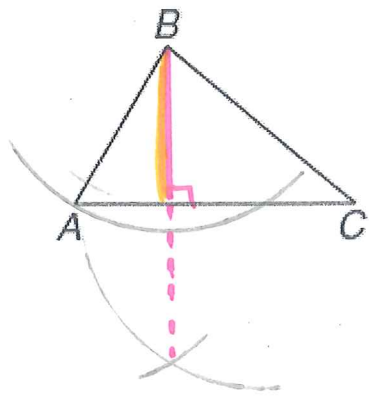
2. Q to $\overleftrightarrow{SR}$
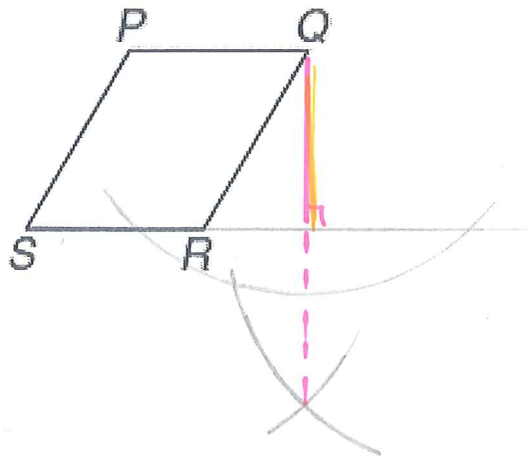
Find the distance between the line and the given point.

3.

$m = \dfrac{3}{2}$

$m_\perp = -\dfrac{2}{3}$

$3^2 + 2^2 = d^2$

$\boxed{\sqrt{13} = d}$

4.

$m = -1$

$m = 1$

$\boxed{d = 3\sqrt{2}}$
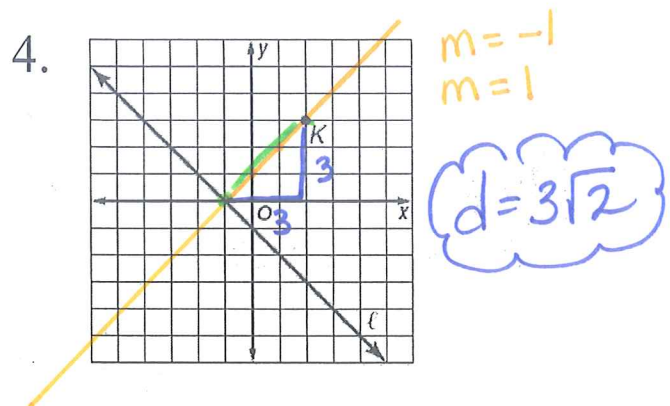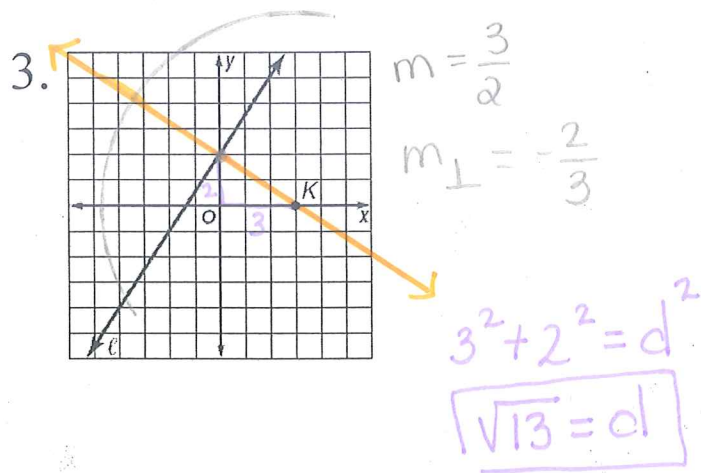
Find the distance between each parallel lines.

5. $y = 7$
   $y = -1$

8
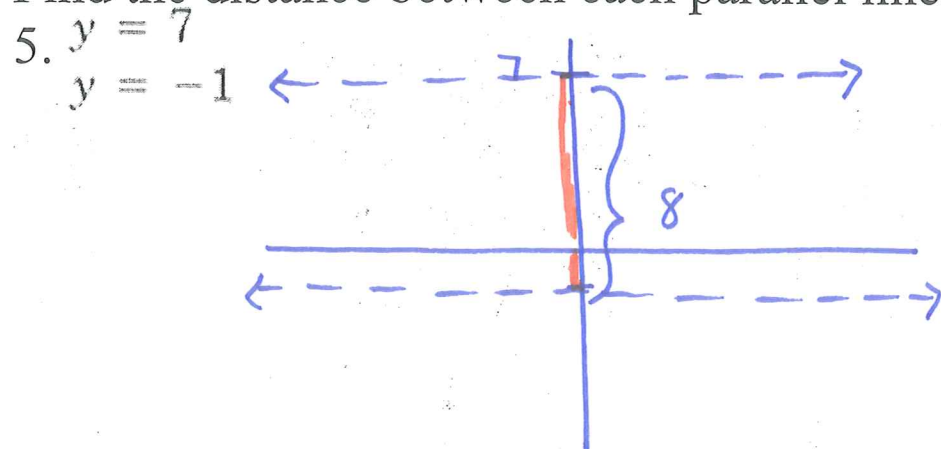
The distance between the 2 // lines is 8 units.
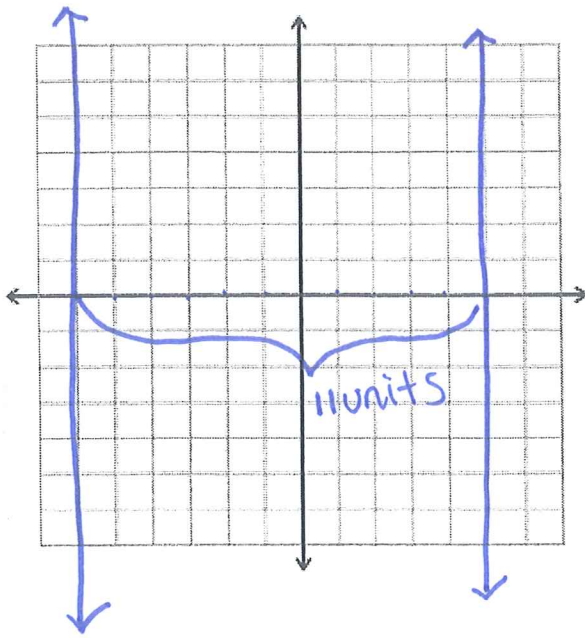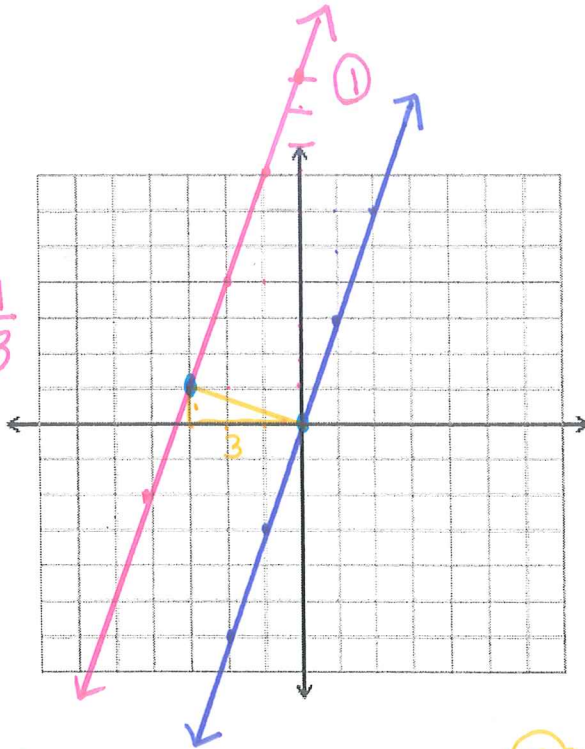
6. $x = -6$
   $x = 5$

The distance between the 2 // lines is 11 units

11 units

7. $y = 3x$
   $y = 3x + 10$

②. $(0,0)$ $m_\perp = -\frac{1}{3}$
   $y = -\frac{1}{3}x$

③. $y = -\frac{1}{3}x$
   $y = 3x + 10$

④. $-\frac{1}{3}x = 3x + 10$
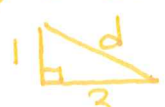 $-\frac{3}{10} \cdot -\frac{10}{3}x = 10 \cdot -\frac{3}{10}$
   $\boxed{x = -3}$
   $(-3, 1)$

$y = 3(-3) + 10$
$y = -9 + 10$
$\boxed{y = 1}$

⑤. Distance
   $1^2 + 3^2 = d^2$
   $\sqrt{10} = d$

The distance between the 2 // lines is $\sqrt{10}$ units

8. $y = -5x$
   $y = -5x + 26$

② $(0,0)$ $m_\perp = \frac{1}{5}$
   $y = \frac{1}{5}x$
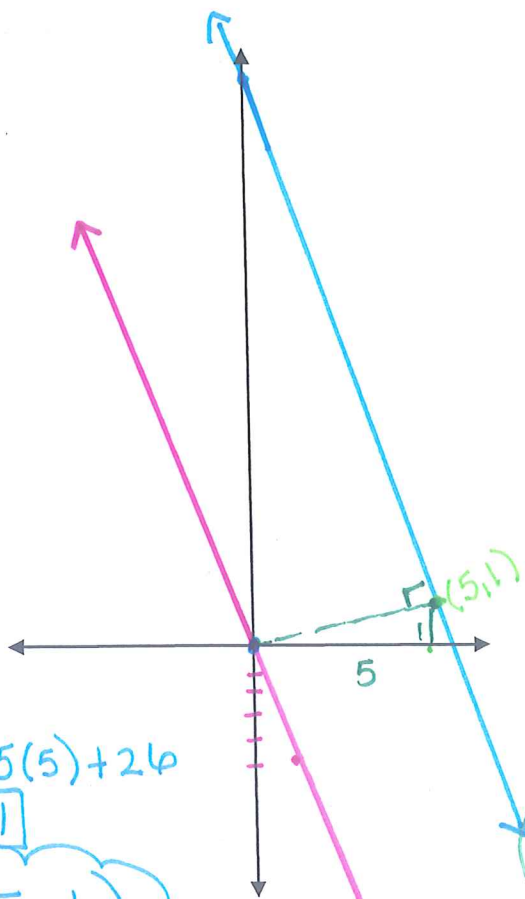
③ $y = \frac{1}{5}x$
   $y = -5x + 26$

④ $\frac{1}{5}x = -5x + 26$
   $\underline{+5x \quad +5x}$

   $\frac{26}{5}x = 26$

   $\boxed{x = 5}$

   $y = -5(5) + 26$
   $\boxed{y = 1}$
   $(5, 1)$

⑤ distance
   $5^2 + 1^2 = d^2$
   $\sqrt{26} = d$
   The distance between the 2 ∥ is $\sqrt{26}$ units

9. $y = x + 9$
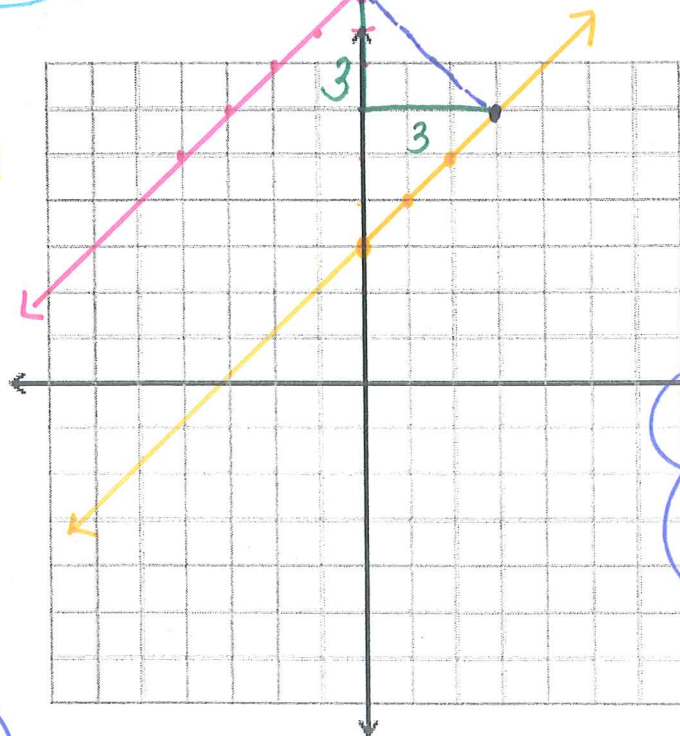 $y = x + 3$

② $(0,9)$ $m_\perp = -1$
   $y = -1x + 9$

3. $y = -x + 9$
   $y = x + 3$

4. $-x + 9 = x + 3$
   $6 = 2x$
   $3 = x$
   $y = 3 + 3$
   $y = 6$
   $(3, 6)$

5.) $3^2 + 3^2 = d$
   $\sqrt{18} = d$
   $\boxed{3\sqrt{2} = d}$

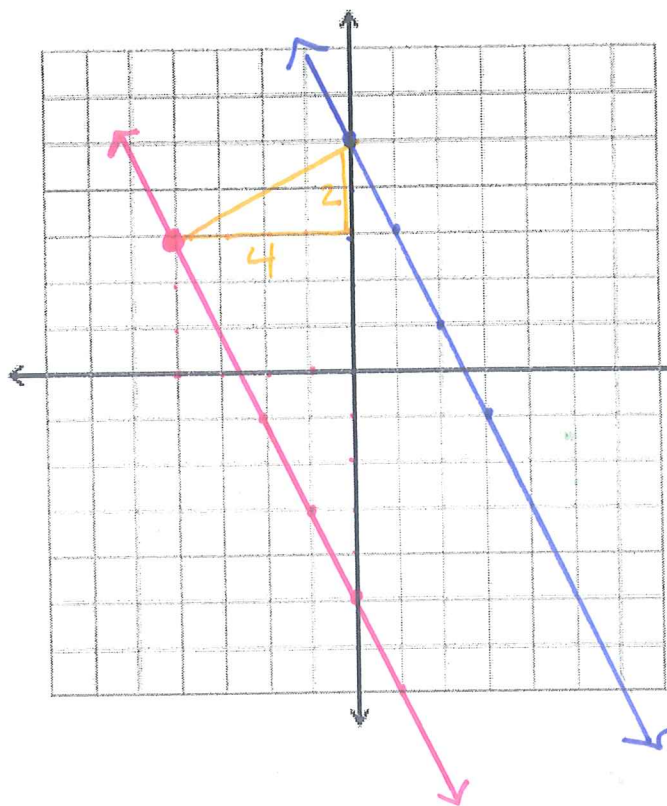   The distance between the 2 ∥ lines is $3\sqrt{2}$ units

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

② $(0,5)$ $m_\perp = \frac{1}{2}$

$y = \frac{1}{2}x + 5$

③ $y = \frac{1}{2}x + 5$
   $y = -2x - 5$

④ $-2x - 5 = \frac{1}{2}x + 5$

$ -5 = \frac{5}{2}x + 5$
$ -5 \phantom{= \frac{5}{2}x} -5$

$\frac{2}{5} \cdot \; -10 = \frac{5}{2}x \cdot \frac{2}{5}$

$\boxed{-4 = x}$

$y = -2(-4) - 5$

$\boxed{y = 3}$

$(-4, 3)$

⑤ distance

$4^2 + 2^2 = d$

$\sqrt{20} = d$

$2\sqrt{5} = d$
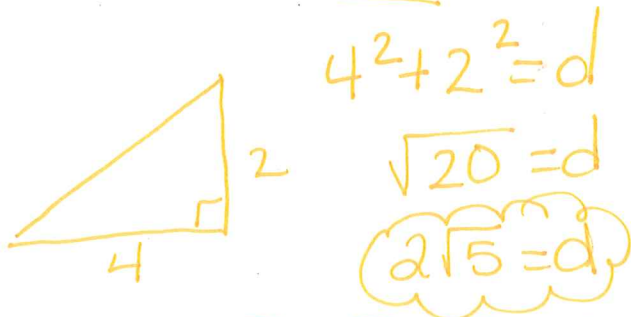
The distance between the 2 Parallel lines is $2\sqrt{5}$ units