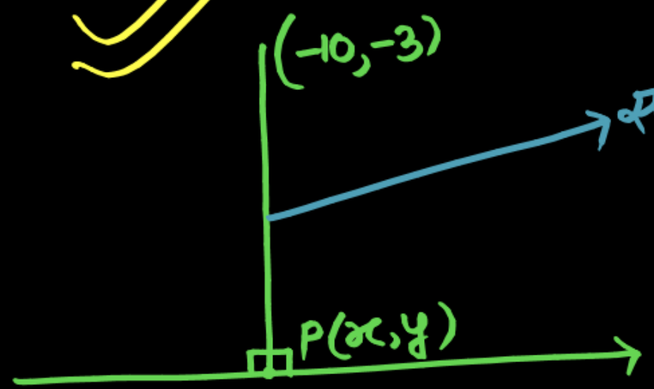
51. Find the foot of a perpendicular of a point (-10,-3) to line 2x+5y-23=0?

बिंदु (-10,-3)से रेखा 2x+5y-23=0 पर डाले गए लम्ब के पाद बिंदु ज्ञात करे?

a)(4,3) b)(5,-3) c)(-6,7) d)(-5,7)

Foot of perpendicular
(लम्बपाद बिन्दु)



समी० 5x-2y=K

5×10-2×-3

-50+6=K

-44=K

5x-2y=-44

$(2x+5y=23)\times 2$ → 46

$(5x-2y=-44)\times 5$ → -220

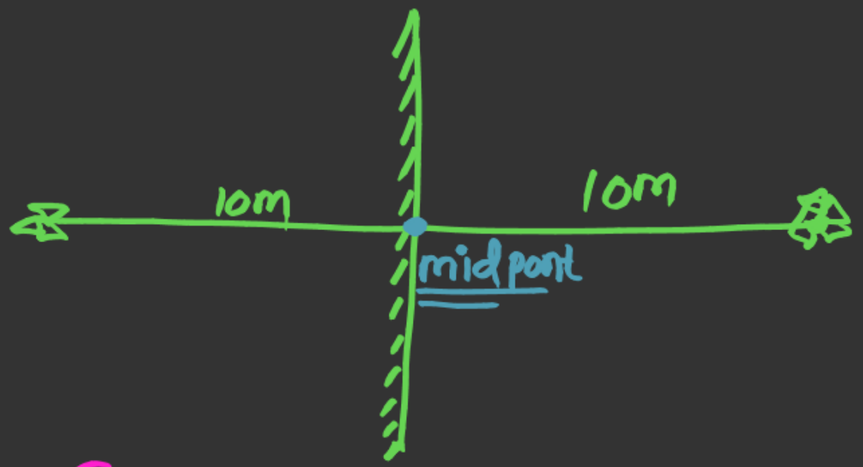
$29x = -174$

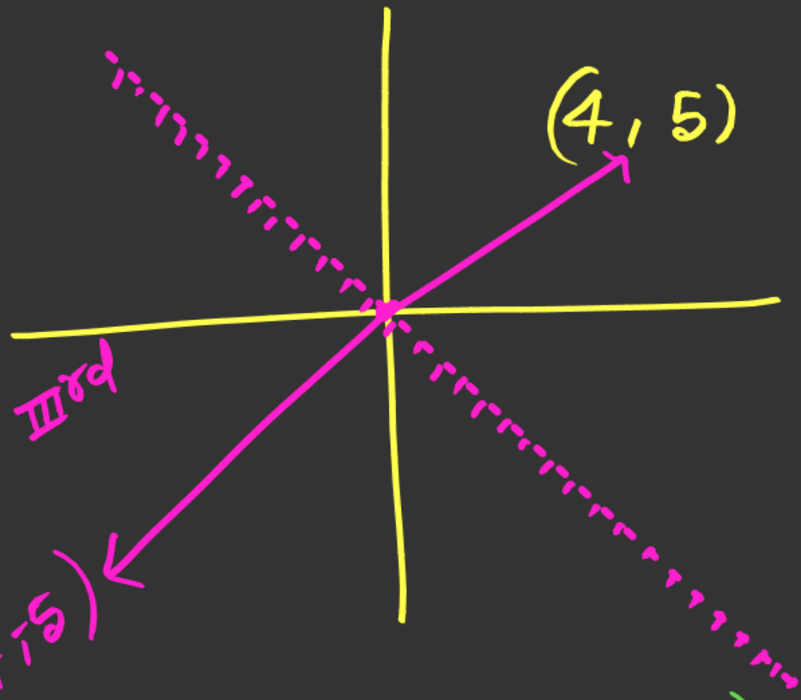
$x = -6$

$x=-6$

$y=7$

Reflection → प्रतिबिम्ब बिन्दु





(4, 5)

(i) मूल बिन्दु के द्वारा → (-4, -5)
दोनों में sign को change कर देना है।

(ii) x-अक्ष के द्वारा → (4, -5)
y = 0
सिर्फ y में चिन्ह बदले

(iii) y-अक्ष द्वारा → (-4, 5)
x = 0
x में sign change करेंगे।

(-7, 8)

(i) मूल बिन्दु ⟶ (+7, -8)

(ii) x-अक्ष ⟶ (-7, -8)
$y = 0$

(iii) y-अक्ष ⟶ (+7, 8)
$x = 0$

(10, -15)

(i) मूल बिन्दु → (-10, +15)

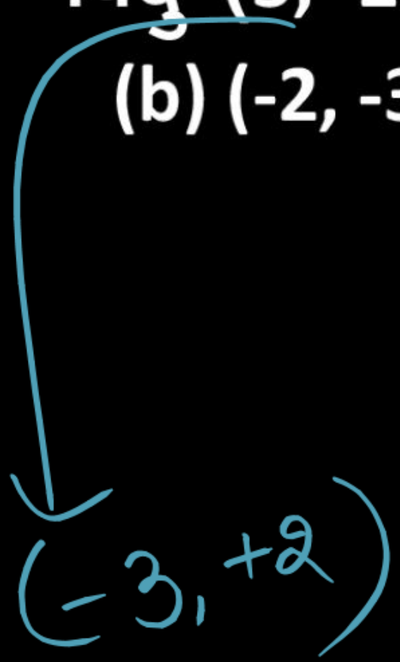
(ii) x-अक्ष → (10, +15)
$y = 0$

(iii) y-अक्ष → (-10, -15)
$x = 0$

52. What is the reflection of the point (3, -2) in the origin?

मूल बिंदु पर बिंदु (3, -2) का प्रतिबिंब क्या है?

(a) (3,-2) (b) (-2, -3) (c) (-3, 2) (d) (3, 2)



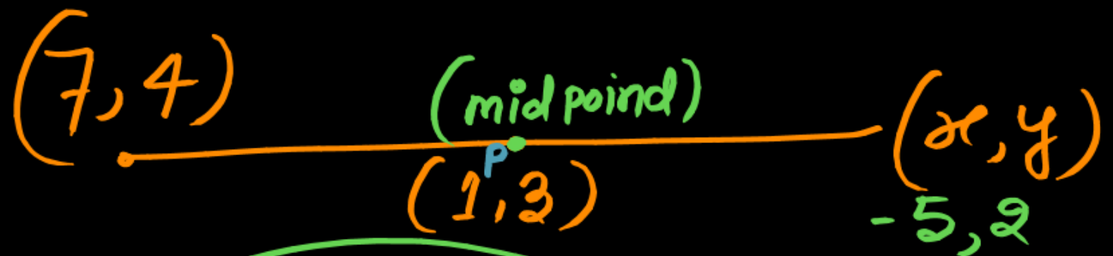
53.

Most Imp.

What is the reflection of the point (7, 4) in the point (1,3)?

बिंदु (1,3) पर बिंदु (7, 4) का प्रतिबिंब क्या है?

(a) (-6,-1) (b) (-5, 2) (c) (6, -2) (d) (8, 7)



$$P(1,3) = \left(\frac{7+x}{2}, \frac{4+y}{2}\right)$$

$$\frac{7+x}{2} = 1 \qquad \frac{4+y}{2} = 3$$

$$7+x = 2 \qquad 4+y = 6$$

$$x = -5 \qquad y = 6-4 = 2$$

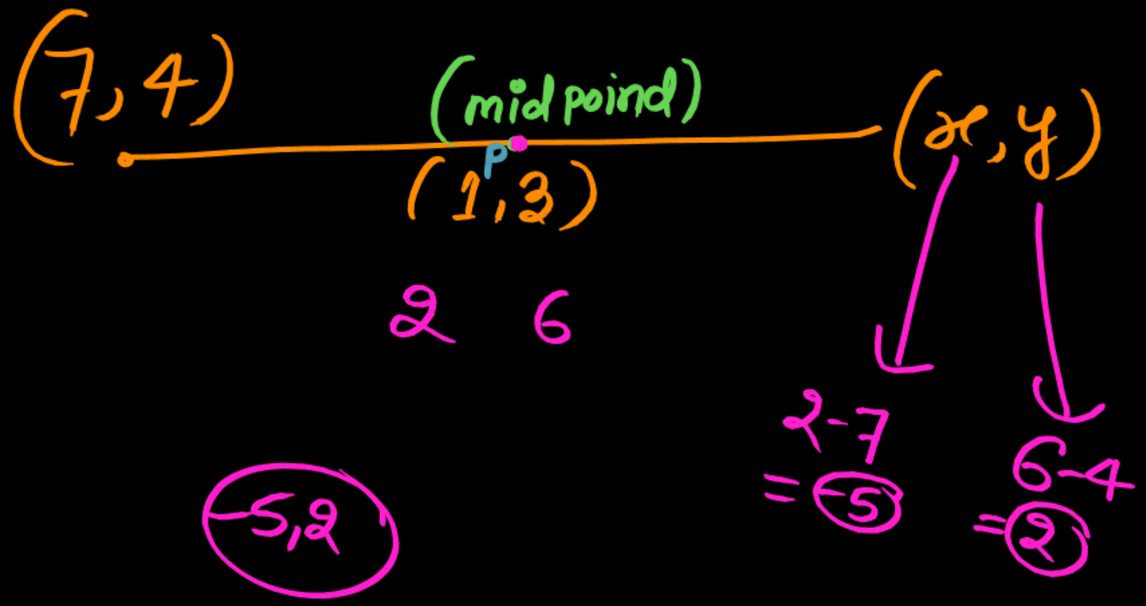
53.

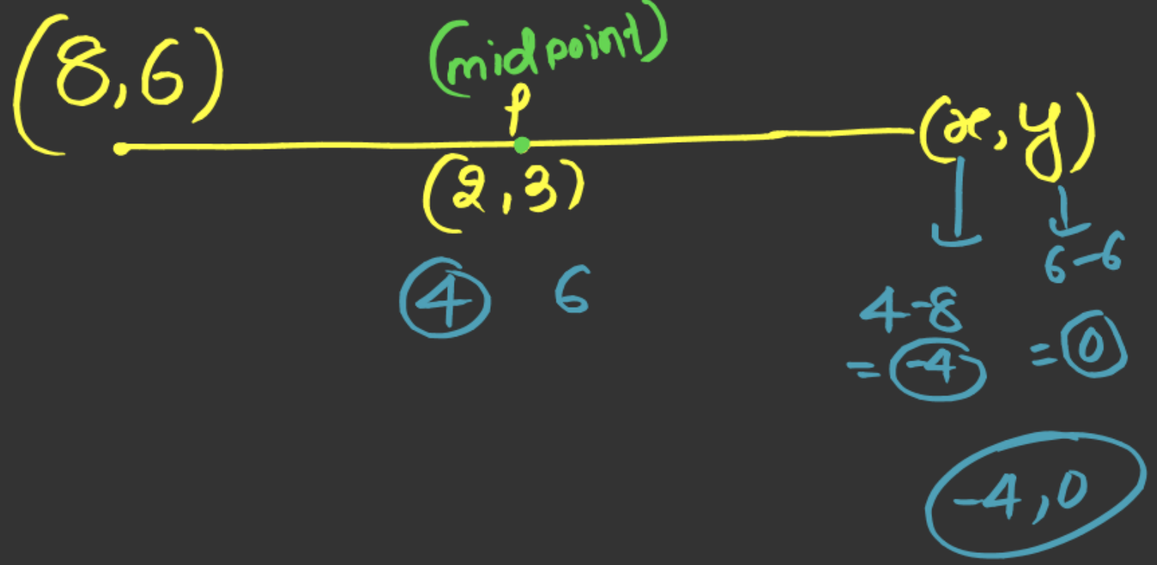
Most Imp.

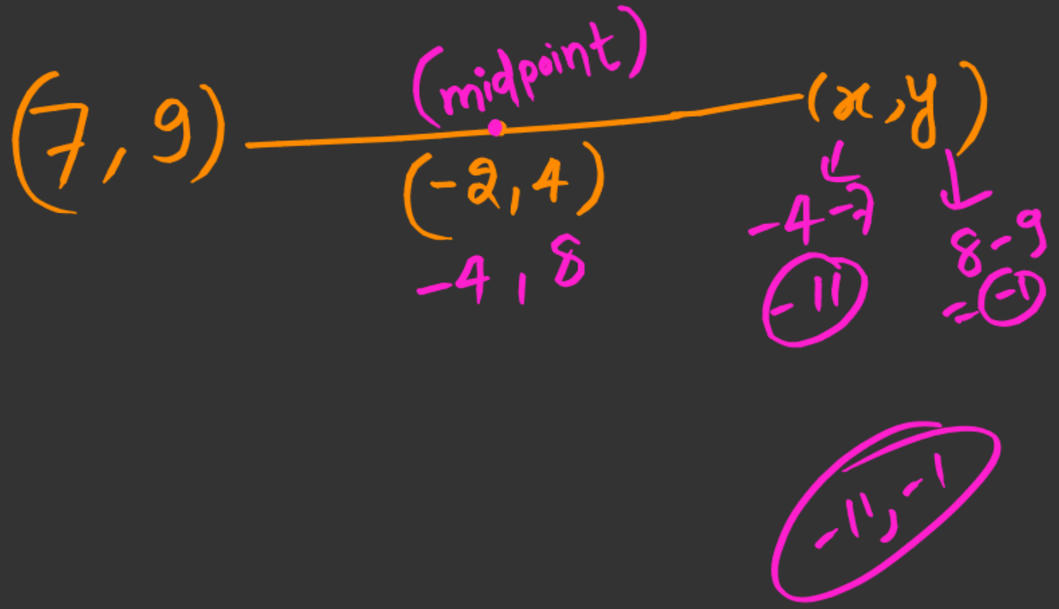
What is the reflection of the point (7, 4) in the point (1,3)?

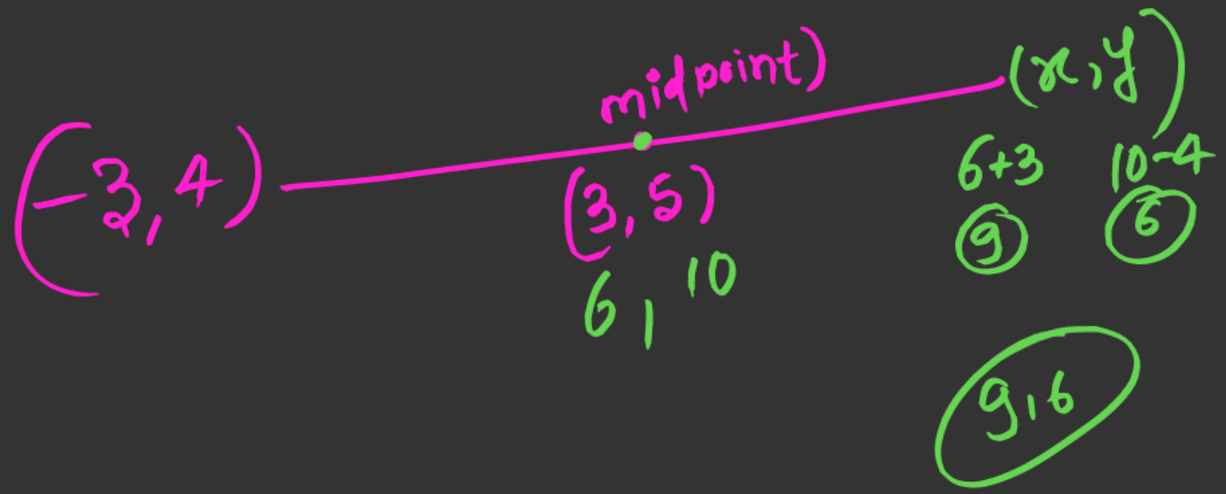
बिंदु (1,3) पर बिंदु (7, 4) का प्रतिबिंब क्या है?

(a) (-6,-1) (b) (-5, 2) (c) (6, -2) (d) (8, 7)




(8,6)
(midpoint)
(x,y)
(2,3)
4
6
6-6
4-8
=-4
=0
-4,0

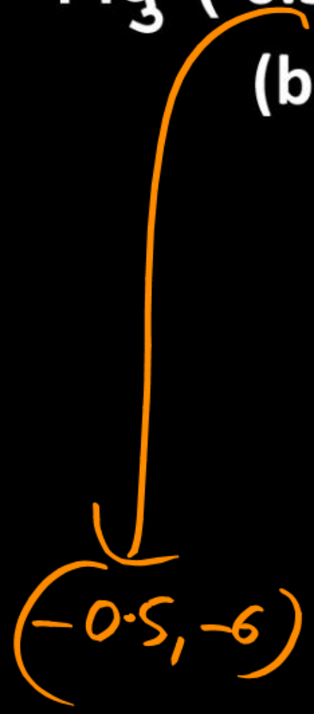

(7, 9)
(midpoint)
(x, y)
(-2, 4)
-4, 8
-4 -7
-11
8 -9
-1
-11, -1


midpoint)
(x, y)
(-3, 4)
(3, 5)
6, 10
6+3
10-4
9
6
9, 6

54. What is the reflection of the point (-0.5, 6) in the line X-axis

X अक्ष पर बिंदु (-0.5, 6) का प्रतिबिंब क्या है?

(a) (0.5,-6) (b) (-6, -0.5) (c) (6, -0.5) (d) (-0.5, -6)



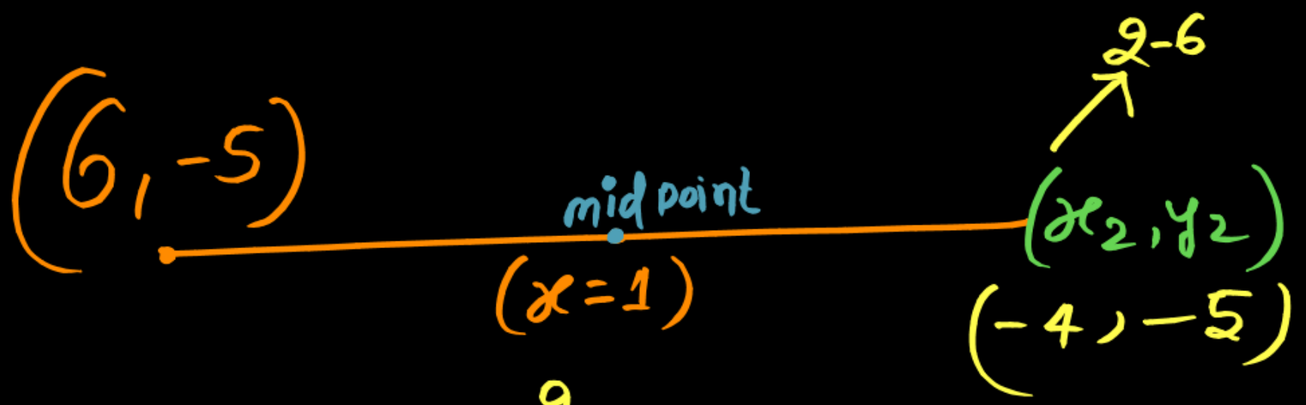
55. What is the reflection of the point (2, -3.5) in the line Y-axis
Y अक्ष पर बिंदु (2, -3.5) का प्रतिबिंब क्या है?

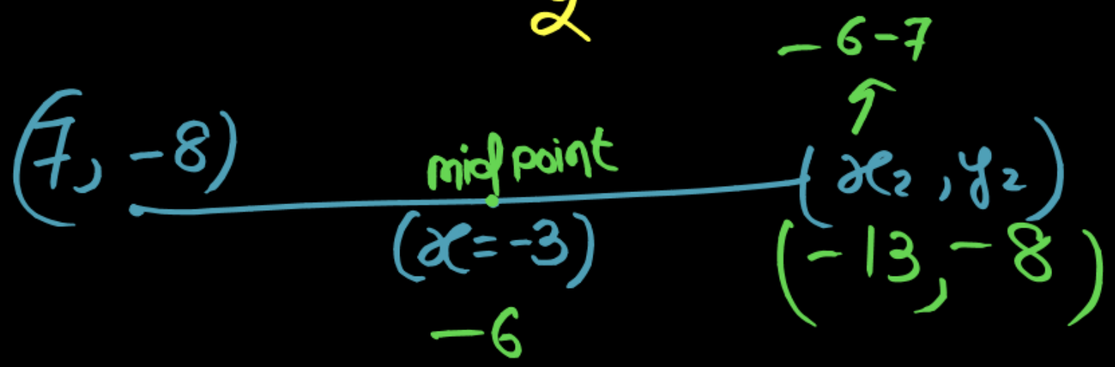
(a) (-2.3.5) (b) (-2, -3.5) (c) (-3.5, -2) (d) (3.5, -2)

56. What is the reflection of the point (6, -5) in the line x= 1

रेखा x= 1 में बिंदु (6, -5) का प्रतिबिंब क्या है?

(a) (5.-7) (b) (6, 7) (c) (-4, -5) (d) (4, -5)

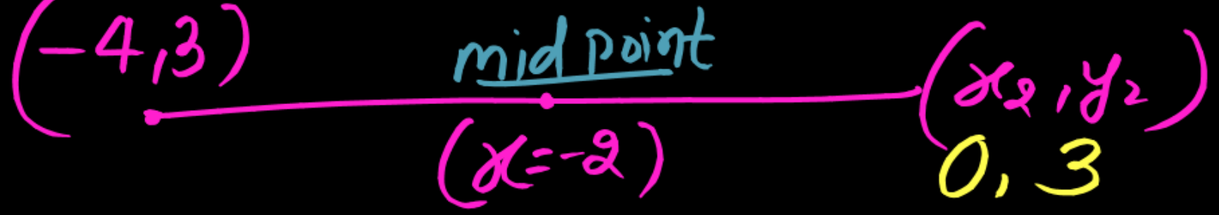




57. What is the reflection of the point (-4, 3) in the line x= -2

रेखा x= -2 में बिंदु (-4, 3) का प्रतिबिंब क्या है?

(a) (-4.-7) (b) (4, 3) (c) (0, 3) (d) (-4, 7)



-4

$-4+4$

$=0$

58. What is the reflection of the point (7, -4) in the line y= 3

रेखा y= 3 में बिंदु (7, -4) का प्रतिबिंब क्या है?

(a) (-7.,4) (b) (13, -4) (c) (7, 10) (d) (7, 11)

$(7, -4)$ — midpoint — (x_2, y_2)

$(y = 3)$ $7, 10$

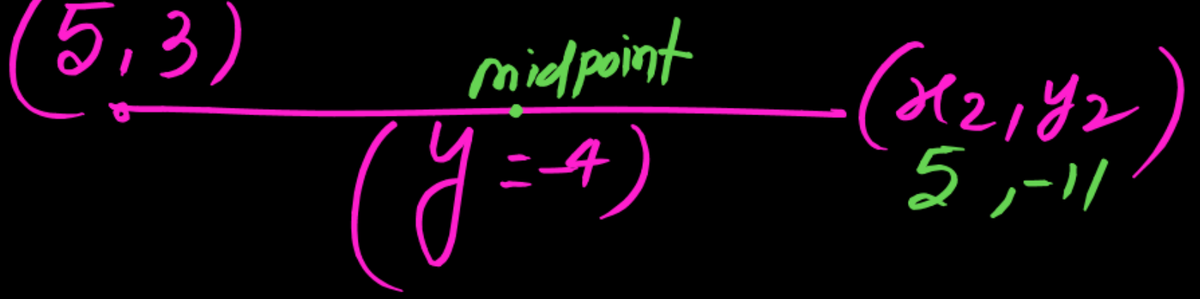
6

$6 + 4 = 10$

59. What is the reflection of the point (5, 3) in the line y= - 4

रेखा y= -4 में बिंदु (5, 3) का प्रतिबिंब क्या है?

(a) (9,3) (b) (9, -11) (c) (5, -11) (d) (-5, -11)

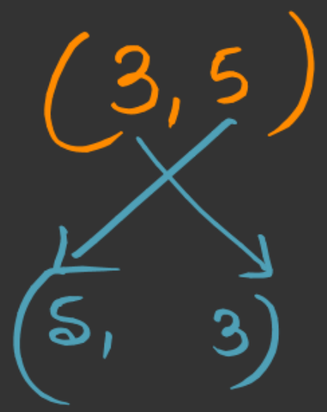


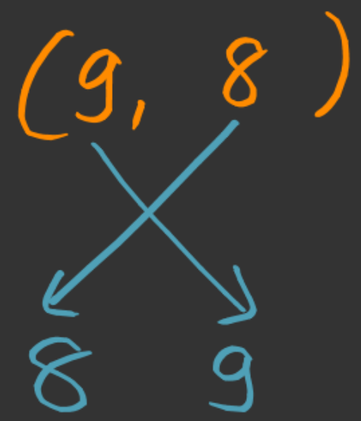
$-8-3$

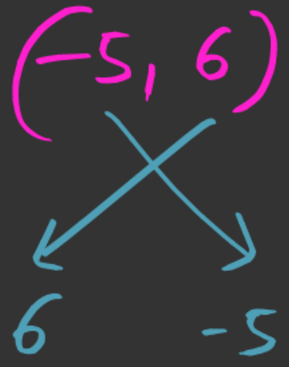
$= -11$

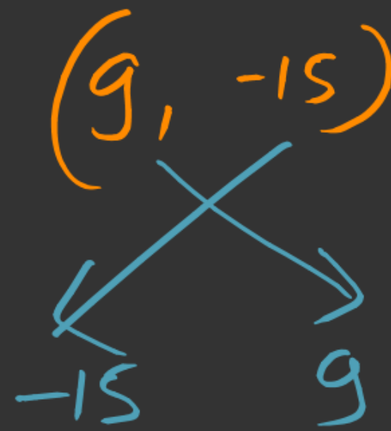
concept

$y = x$





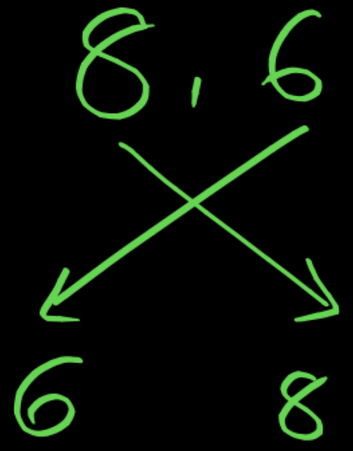




60. What is the reflection of the point (8, 6) in the line y= x

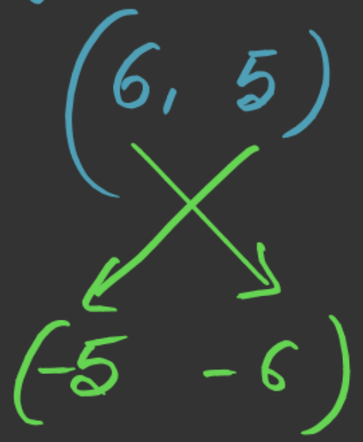
रेखा y= x में बिंदु (8, 6) का प्रतिबिंब क्या है?

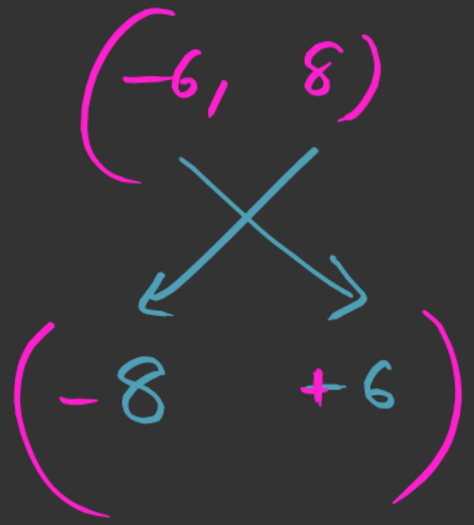
(a) (8,6) (b) (6, 8) (c) (-8, -6) (d) (-6, -8)

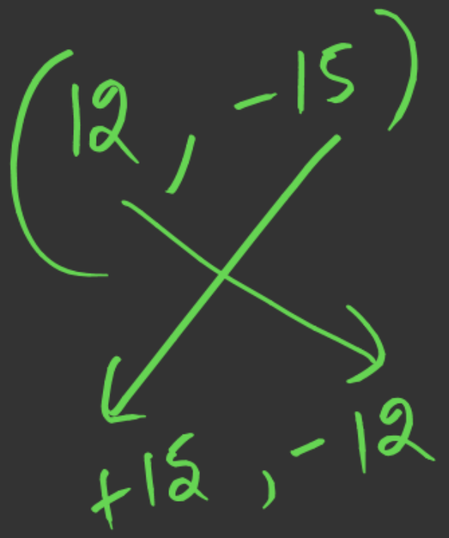


Concept

$y = -x$



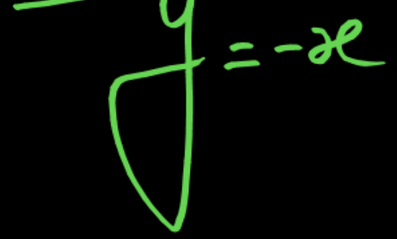


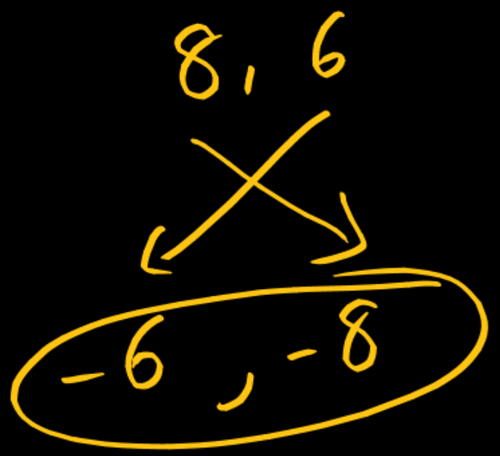


61. What is the reflection of the point (8, 6) in the line y= -x

रेखा y= -x में बिंदु (8, 6) का प्रतिबिंब क्या है?

(a) (8,6) (b) (6, 8) (c) (-8, -6) (d) (-6, -8)





62.

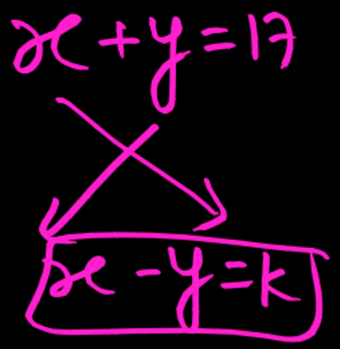
Most Imp.

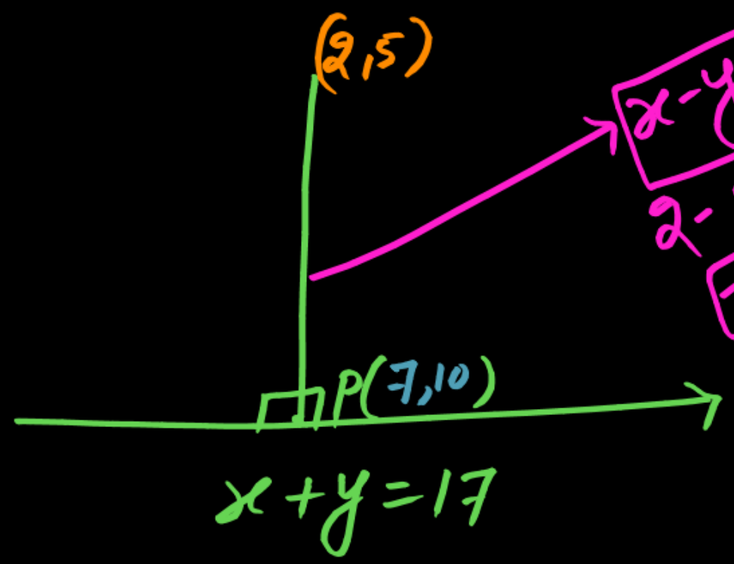
What is the reflection of the point (2, 5) in the line x+y-17=0

रेखा x+y-17=0 में बिंदु (2, 5) का प्रतिबिंब क्या है?

(a) (9,16) (b) (12, 15) (c) (10, 13) (d) (12, 17)

(i) मूल बिन्दु
(ii) x-अक्ष
(iii) y-अक्ष
(iv) (x,y) बिन्दु
(v) (x=k)
(vi) (y=k)
(vii) y=x
(viii) y=-x
(ix) ax+by+c=0





x+y=17
x-y=-3
2x=14
x=7
y=10

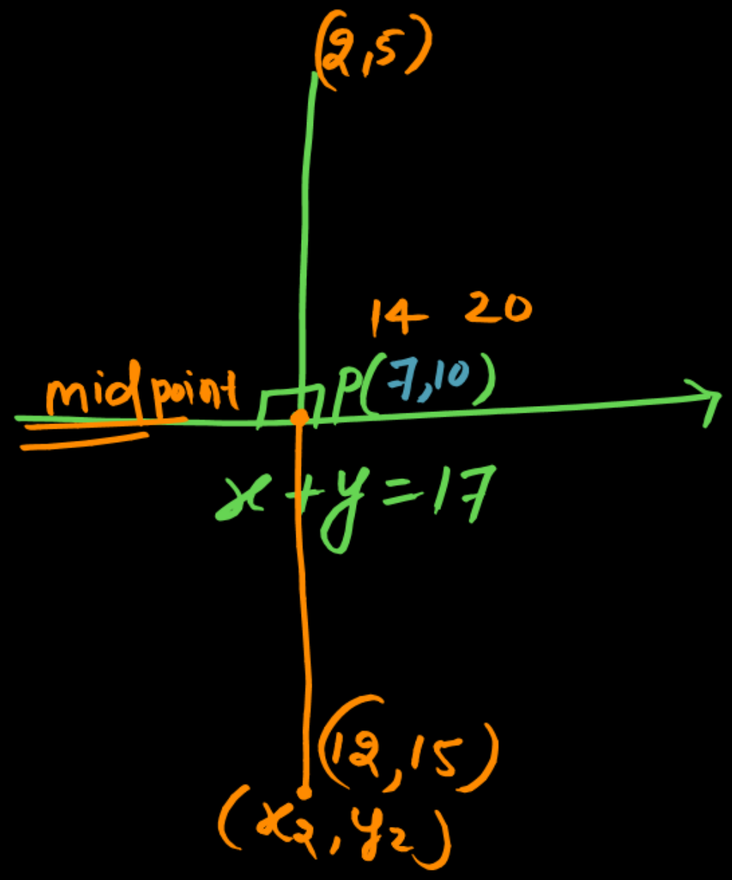
62.

Most Imp.

What is the reflection of the point (2, 5) in the line x+y-17=0

रेखा x+y-17=0 में बिंदु (2, 5) का प्रतिबिंब क्या है?

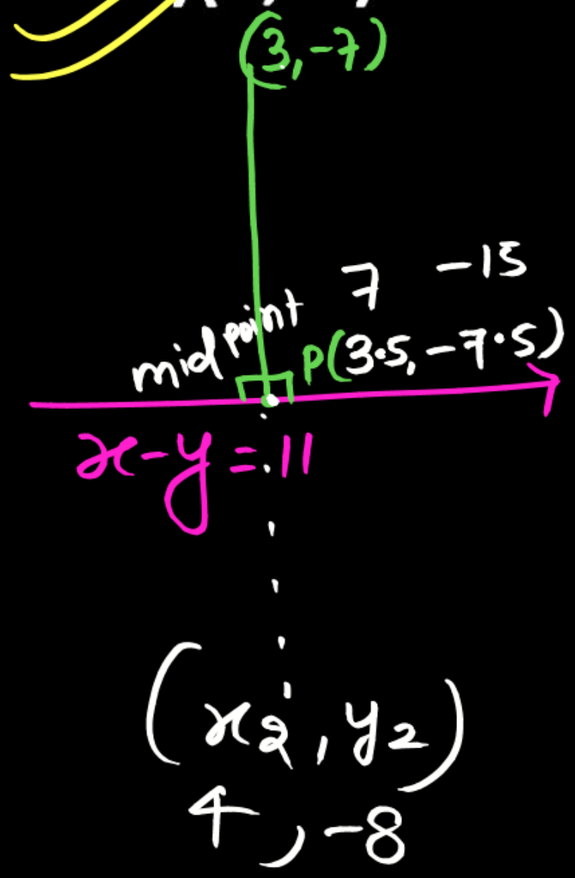
(a) (9,16) (b) (12, 15) (c) (10, 13) (d) (12, 17)



63. What is the reflection of point (3,-7) in the line x-y=11 ?

रेखा x-y=11 में बिंदु (3, -7) का प्रतिबिंब क्या है?

a)(3,-9) b)(4,-8) c)(5,-11) d)(3,-5)



$x+y=K$

$3-7=K$

$-4=K$

$x-y=11$

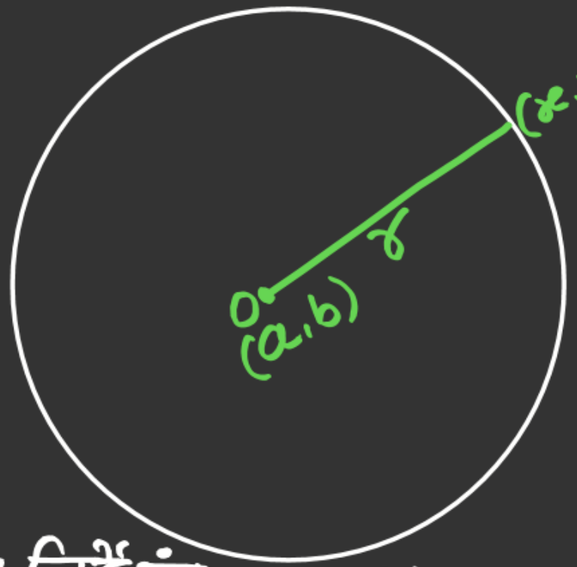
$x+y=-4$

$2x=7$

$x=3.5$

$y=-7.5$

circle ⇒ वृत



general Equation of circle

$$(x-a)^2+(y-b)^2=r^2$$

$$g^2+f^2-r^2=c$$
$$g^2+f^2=c+r^2$$
$$r=\sqrt{g^2+f^2-c}$$

$$(x+g)^2+(y+f)^2=r^2$$
$$x^2+g^2+2gx+y^2+f^2+2fy=r^2$$

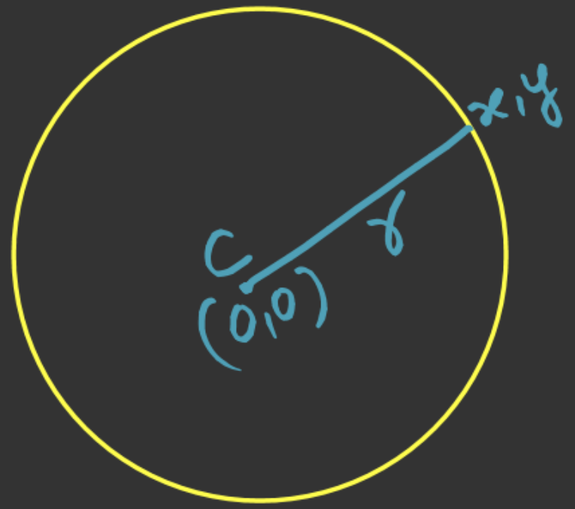
Standard Equation of circle

$$x^2+y^2+2gx+2fy+g^2+f^2=r^2$$
$$x^2+y^2+2gx+2fy+\underbrace{g^2+f^2-r^2}_{c}=0$$
$$x^2+y^2+2gx+2fy+c=0$$

① केन्द्रक का निर्देशांक $(-g,-f)$

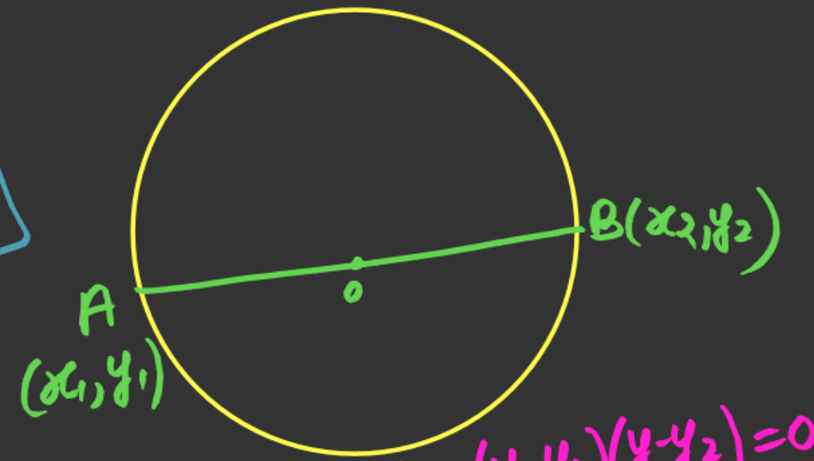
ii $r=\sqrt{g^2+f^2-c}$

मूल बिन्दु के द्वारा वृत्त का समीकरण



$$(x-0)^2+(y-0)^2=r^2$$

$$\boxed{x^2+y^2=r^2}$$



$$(x-x_1)(x-x_2)+(y-y_1)(y-y_2)=0$$

64. What is the equation of a circle with centre of origin and radius is 6 cm?

उत्पत्ति केंद्र (centre of origin) और 6 cm त्रिज्या वाले वृत्त का समीकरण क्या है?

(a) $x^2+y^2-x-y=36$
(b) $x^2+y^2-x=36$
(c) $x^2+y^2-y=36$
(d) $x^2+y^2-36=0$

(i) $(x-a)^2+(y-b)^2=r^2$
(ii) $x^2+y^2+2gx+2fy+c=0$
(iii) $C(-g,-f)$
(iv) $r=\sqrt{g^2+f^2-c}$
(v) $x^2+y^2=r^2$
(vi) $(x-x_1)(x-x_2)+(y-y_1)(y-y_2)=0$

$x^2+y^2=r^2$
$x^2+y^2=6^2$
$x^2+y^2=36$
$x^2+y^2-36=0$

65. The equation of circle with centre (1, -2) and radius 4 cm is:

(1, -2) केंद्र और 4 cm त्रिज्या वाले वृत्त का समीकरण क्या होगा?

(a) $x^2+y^2+2x-4y=16$
(b) $x^2+y^2-2x+4y=16$
(c) $X^2+y^2+2x-4y=11$
(d) $X^2+y^2-2x+4y=11$

$(x-a)^2+(y-b)^2=r^2$

$(x-1)^2+(y+2)^2=4^2$

$x^2+1-2x+y^2+4+4y=16$

$x^2+y^2-2x+4y+1+4=16$

$x^2+y^2-2x+4y-11=0$

$x^2+y^2-2x+4y=11$

$x^2+y^2-2x+4y=11$

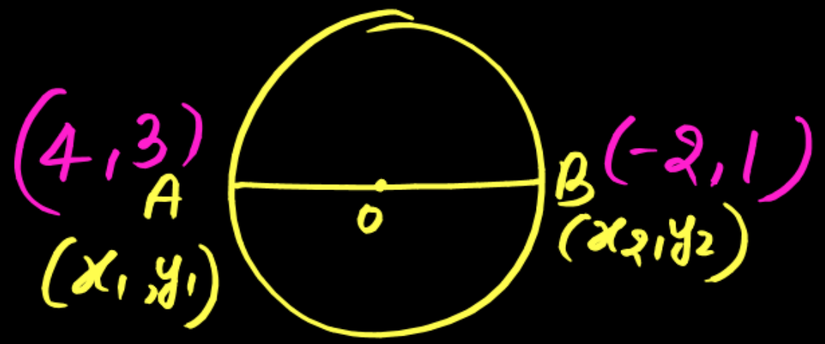
$C \to (1,-2)$

$r \to 4$

66. **Find the equation of a circle whose diameter has end points (4,3) and (-2,1).**

एक वृत्त के समीकरण का पता लगाएं जिसके व्यास के अंत बिंदु (4, 3) और (-2, 1) हैं।

(a) $X^2+y^2-2x-4y=3$
(b) $x^2+y^2-2x-4y=5$
(c) $x^2+y^2-6x+2y=3$
(d) $x^2+y^2-2x+4y=5$



समी० $\Rightarrow (x-x_1)(x-x_2)+(y-y_1)(y-y_2)=0$

$(x-4)(x+2)+(y-3)(y-1)=0$

$x^2+2x-4x-8+y^2-y-3y+3=0$

$x^2+y^2=2x-4y-5=0$

$x^2+y^2-2x-4y=5$

$x^2+y^2-2x+4y=11$

$x^2+y^2-2x+4y-11=0$

$C=-11$

$-g \rightarrow +\frac{2}{2}=1$

$-f \rightarrow -\frac{4}{2}=-2$

(i) $C(-g,-f) \rightarrow (1,-2)$

(ii) $r \longrightarrow \sqrt{g^2+f^2-c}$

$= \sqrt{1+4+11}$

$= \sqrt{16}$

$= 4$