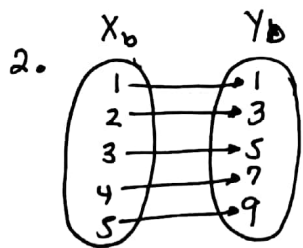
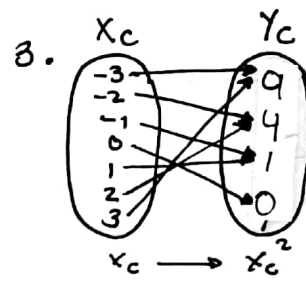


THE RELATION IS
 $X_a \rightarrow X_a^2$



THE RELATION IS
 $X_b \rightarrow 2X_b - 1$



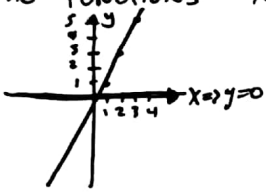
$X_c \rightarrow X_c^2$

4. THE FUNCTION IS THE SAME x^2 BUT THEY DIFFER IN DOMAIN AND RANGE.

5. THE FUNCTIONS $X_a \rightarrow X_a^2$ AND $X_b \rightarrow 2X_b - 1$ ARE ONE-TO-ONE.

6. ?

8.



$\theta = \alpha = 63.43^\circ, m = 2$

$\tan 63.43^\circ \approx 1.9956 \approx 2.0$ (3sf)

10. $X_d: \alpha = 71.57^\circ \quad m = 3 \quad \tan \alpha = 3.$

$X_e: \alpha = 153.43^\circ \quad m = -0.5 \quad \tan \alpha = -0.5$

$X_f: \alpha = 135.0^\circ \quad m = -1 \quad \tan \alpha = -1$

$X_g: \alpha = 26.57^\circ \quad m = 0.5 \quad \tan \alpha = 0.5$

11. THE SLOPE / GRADIENT HAS THE SAME VALUE AS THE TANGENT OF THE ANGLE OF INCLINATION OF THE LINE.

12. INCREASING: POSITIVE SLOPES \rightarrow ACUTE ANGLES

DECREASING: NEGATIVE SLOPES \rightarrow OBTUSE ANGLES.

13. IF THE LINE IS HORIZONTAL $\tan \alpha = 0$, THAT IS THE SLOPE / GRADIENT IS 0. THE FUNCTION DOES NOT CHANGE, IT IS A CONSTANT FUNCTION.

14. $\tan \alpha$ IS UNDEFINED FOR VERTICAL LINES: $\alpha = 90^\circ \rightarrow \sin 90^\circ = 1, \cos 90^\circ = 0 \therefore \tan 90^\circ = \frac{1}{0}$
 THE EQUATION IS $x = a$.
 ↓
 undefined

15. $X_b: y = 2x - 1$ SLOPE-INTERCEPT FORM
 $2x - y - 1 = 0$ CARTESIAN FORM
 $y - 1 = m(x - 1)$ POINT-SLOPE FORM
 $\frac{x}{\frac{1}{2}} + \frac{y}{-1} = 1$ INTERCEPT FORM.

$$X_d: y = 3x - 20 \quad \text{SLOPE-INTERCEPT FORM}$$

$$\cdot 3x - y - 20 = 0 \quad \text{CARTESIAN FORM}$$

$$\cdot y + 17 = 3(x - 1) \quad \text{POINT-SLOPE FORM}$$

$$3x - y = 20$$

$$\frac{3x}{20} - \frac{y}{20} = 1$$

$$\cdot \frac{x}{20/3} + \frac{y}{-20} = 1 \quad \text{INTERCEPT FORM}$$

$$X_e: y = -\frac{1}{2}x + 1$$

$$\cdot x + 2y - 2 = 0$$

$$\cdot y - 0 = -\frac{1}{2}(x - 2)$$

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

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

$$X_f: y = -x - 4$$

$$\cdot x + y + 4 = 0$$

$$\cdot y + 5 = -(x - 1)$$

$$\cdot \frac{x}{4} + \frac{y}{4} = 1$$

$$X_g: y = \frac{1}{2}x$$

$$\cdot x - 2y = 0$$

$$\cdot y - 1 = \frac{1}{2}(x - 2)$$

• NOT POSSIBLE TO WRITE
BECAUSE INTERCEPTS
HAPPEN AT (0,0)