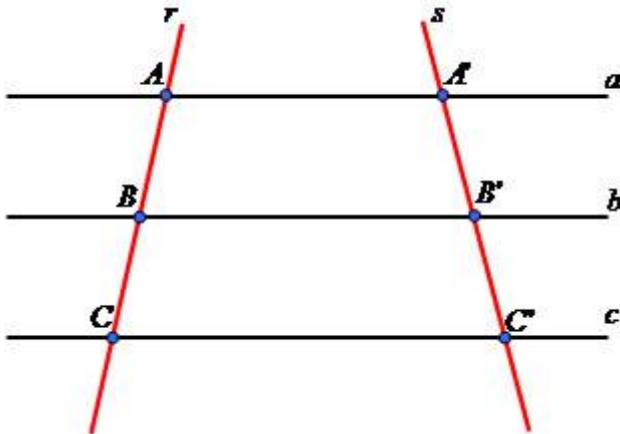


Teorema de Tales

O Teorema de Tales pode ser determinado pela seguinte lei de correspondência:

“Feixes de retas paralelas cortadas ou intersectadas por segmentos transversais formam segmentos de retas proporcionalmente correspondentes”.

Para compreender melhor o teorema observe o esquema representativo a seguir:

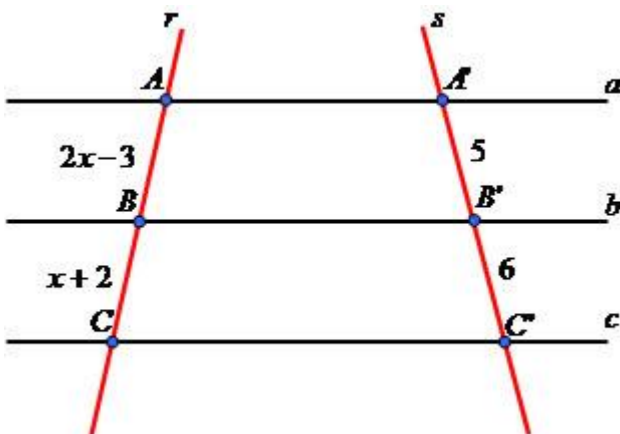


Pela proporcionalidade existente no Teorema, temos a seguinte situação:

$$\frac{AB}{BC} = \frac{A'B'}{B'C'}$$

Exemplo 1

Aplicando a proporcionalidade existente no Teorema de Tales, determine o valor dos segmentos AB e BC na ilustração a seguir:



Determinando o valor de x:

$$\frac{AB}{BC} = \frac{A'B'}{B'C'}$$

$$\frac{2x-3}{x+2} = \frac{5}{6}$$

$$6 \cdot (2x-3) = 5 \cdot (x+2)$$

$$12x-18=5x+10$$

$$12x-5x=10+18$$

$$7x=28$$

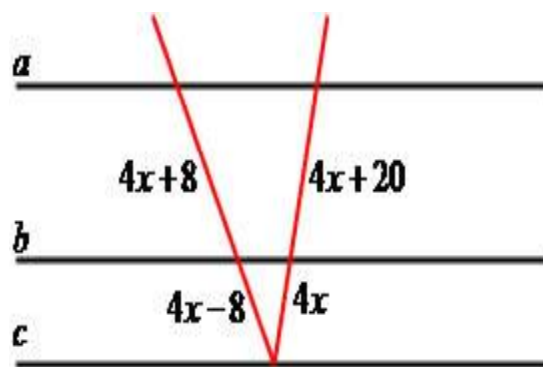
$$x = \frac{28}{7}$$

$$x=4$$

$$AB = 2x - 3 \rightarrow 2 \cdot 4 - 3 = 5$$

$$BC = x + 2 \rightarrow 4 + 2 = 6$$

2) Determine o valor de x na figura a seguir:



$$\frac{4x+8}{4x-8} = \frac{4x+20}{4x}$$

$$4x \cdot (4x+8) = (4x-8) \cdot (4x+20)$$

$$16x^2 + 32x = 16x^2 + 80x - 32x - 160$$

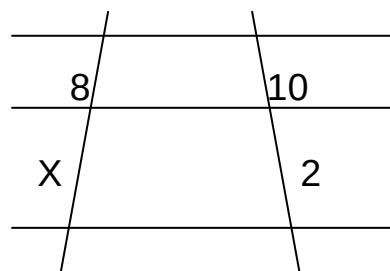
$$16x^2 - 16x^2 + 32x + 32x - 80x = -160$$

$$-16x = -160$$

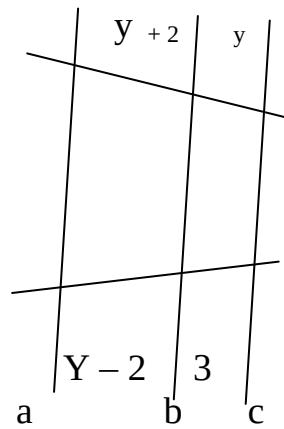
$$x=10$$

3) Na figura $a//b//c$, determinar a medida x indicada:

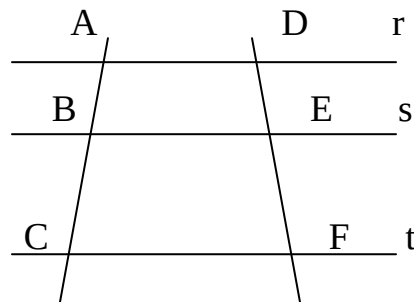
a)



b)



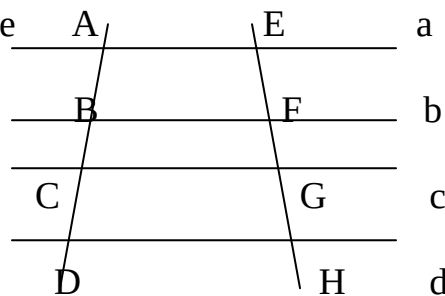
4) Na figura, $r \parallel s \parallel t$, sabendo-se que $AB = 5$ cm, $BC = 9$ cm e $DF = 28$ cm, determine as medidas DE e EF .



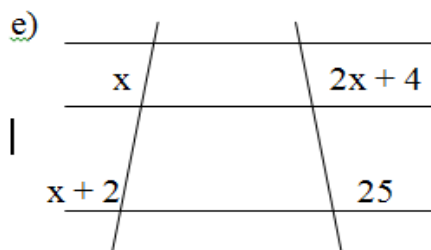
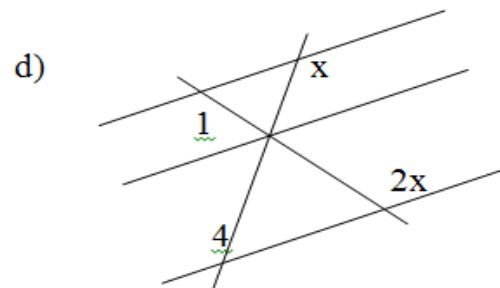
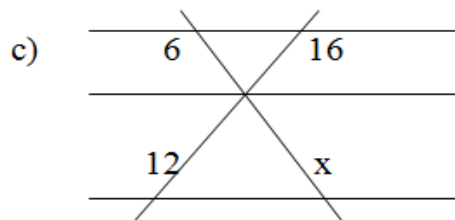
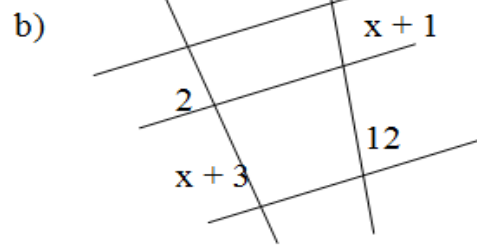
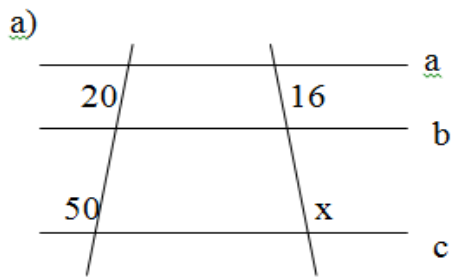
5) Verifique se os segmentos $AB = 25$ cm, $MN = 15$ cm, $PQ = 10$ cm e $RS = 6$ cm são, nessa ordem, proporcionais.

6) Quatro segmentos $\overline{AB}$, $\overline{CD}$, $\overline{EF}$ e $\overline{GH}$, são nessa ordem, proporcionais. Sabendo-se que $AB = 15$ cm, $CD = 12$ cm e $EF = 8$ cm, qual a medida de $\overline{GH}$?

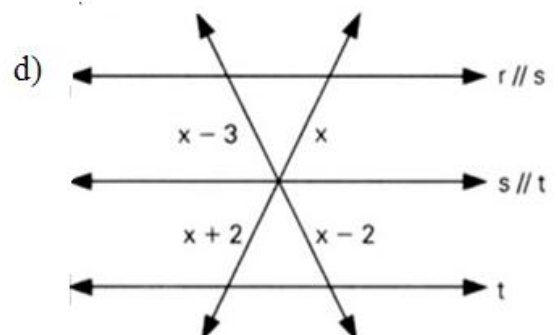
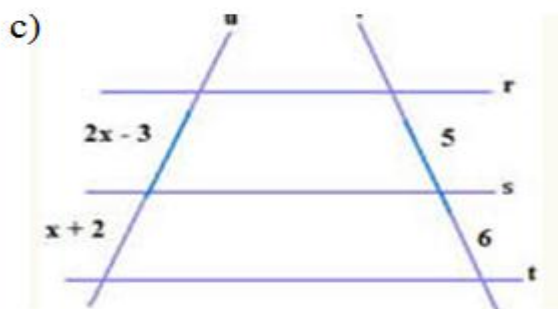
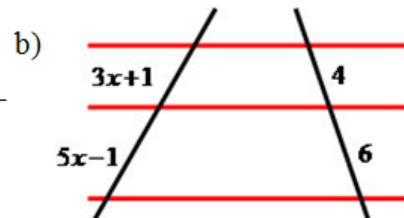
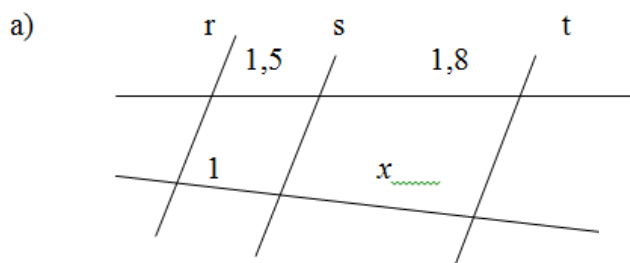
7) Na figura, $a \parallel b \parallel c \parallel d$. Sabendo que $\overline{AB} \cong \overline{BC} \cong \overline{CD}$ e $\overline{EF} = 8$ cm, qual a medida de $\overline{GH}$ e



8) Nas figuras a//b//c, determine os valores de x.



9) Na figura seguinte, determine o valor de x, sabendo que $r \parallel s \parallel t$.



e) a//b//c//d

