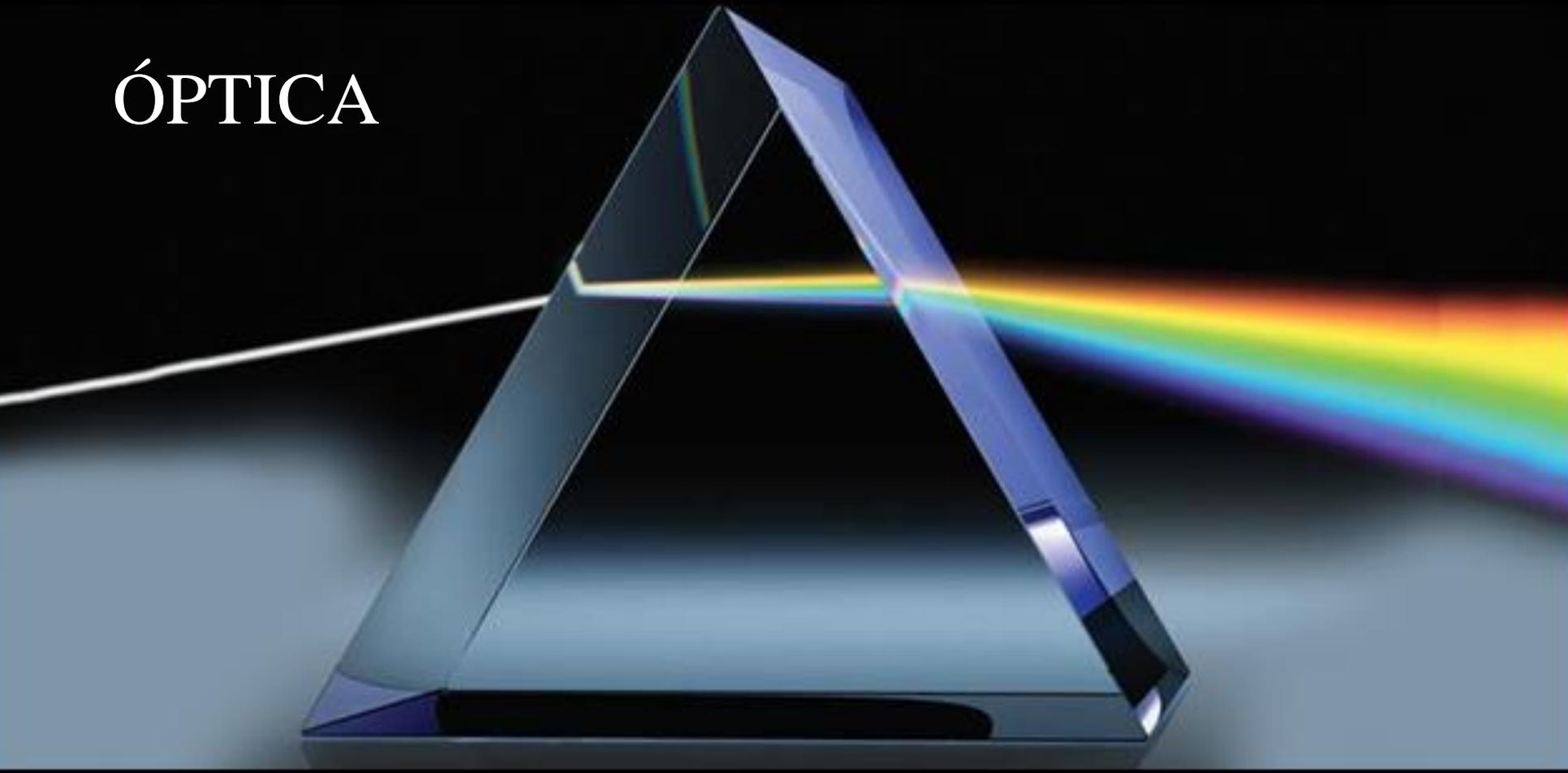
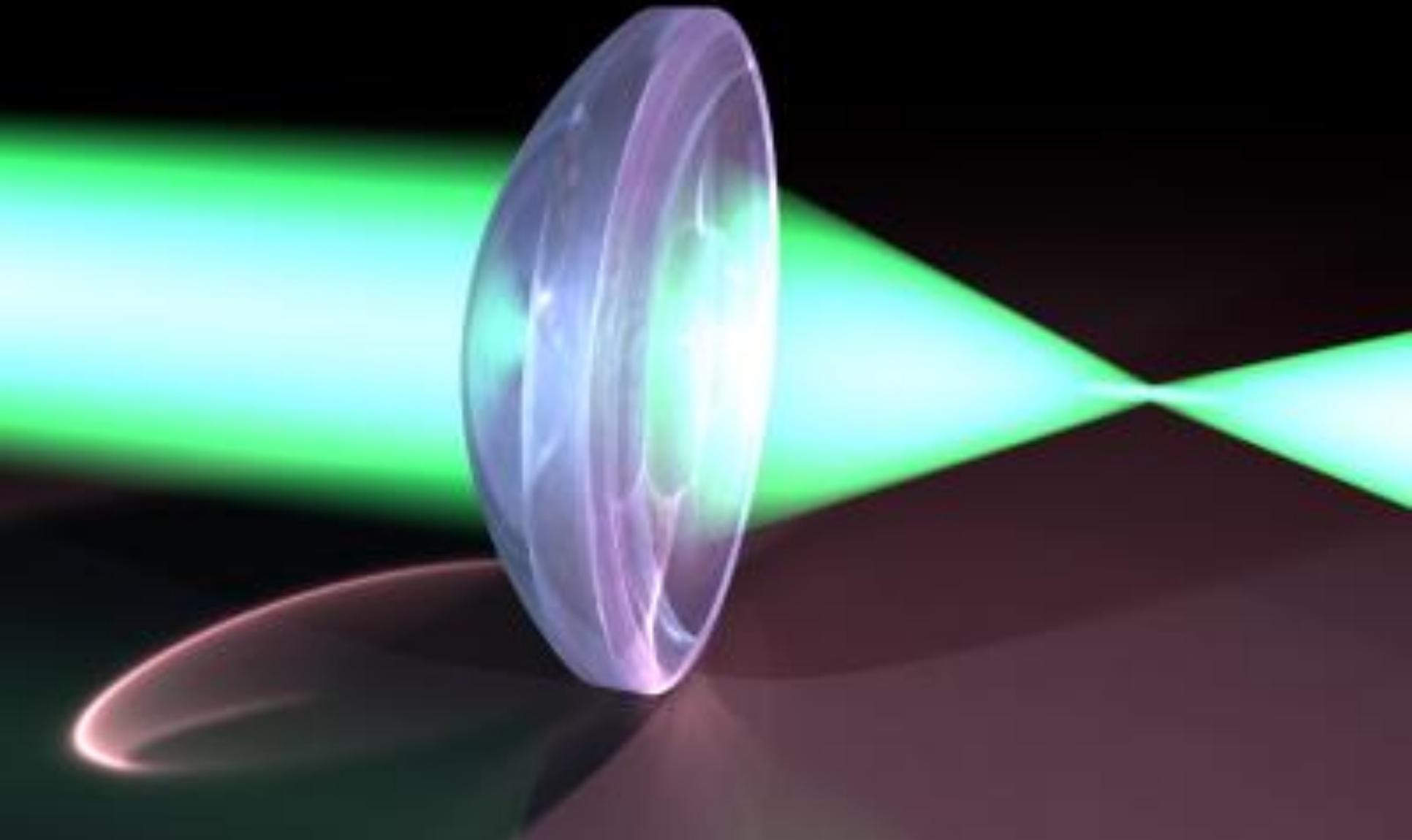
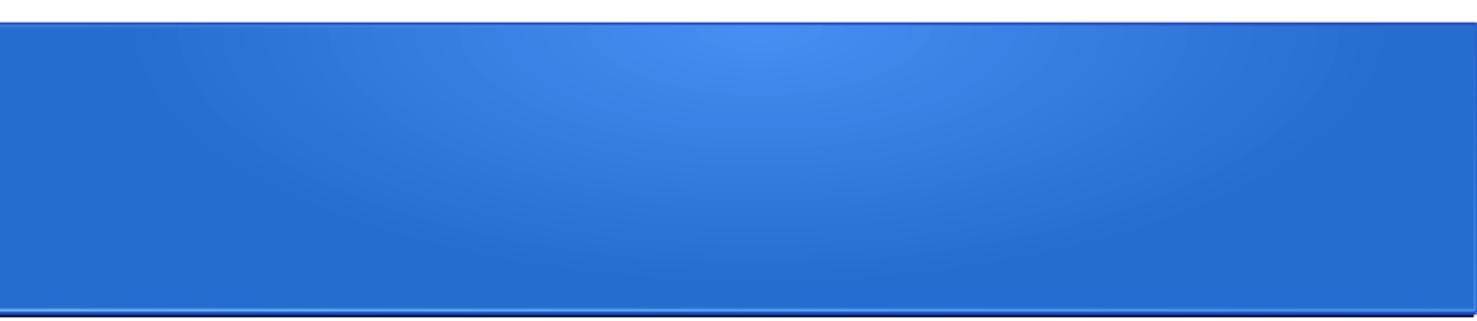


ÓPTICA



LENTES ESFÉRICAS

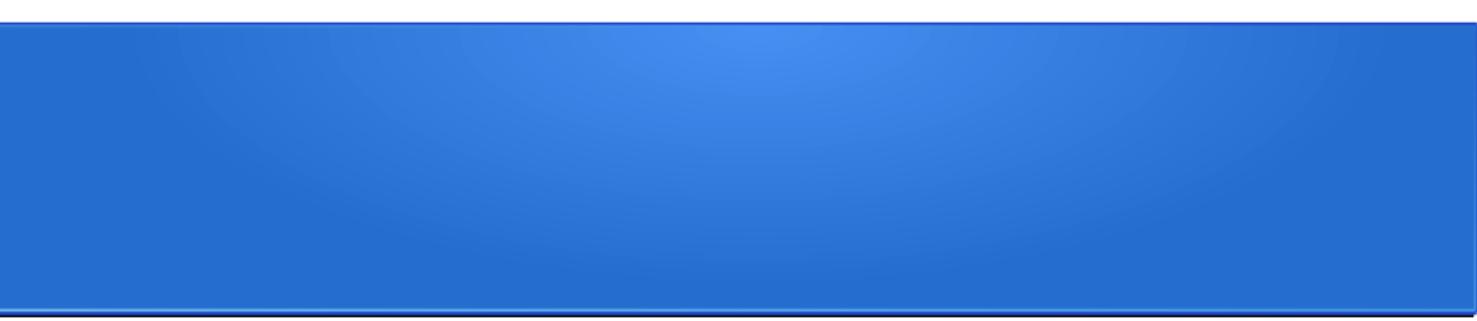




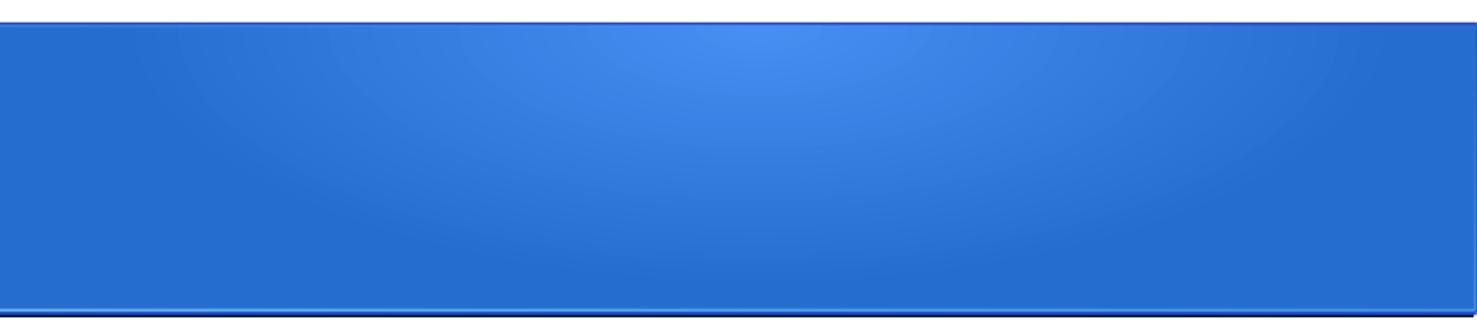
FORMAÇÃO DE IMAGENS EM LENTES: MÉTODO GEOMÉTRICO

PROF. DANILO

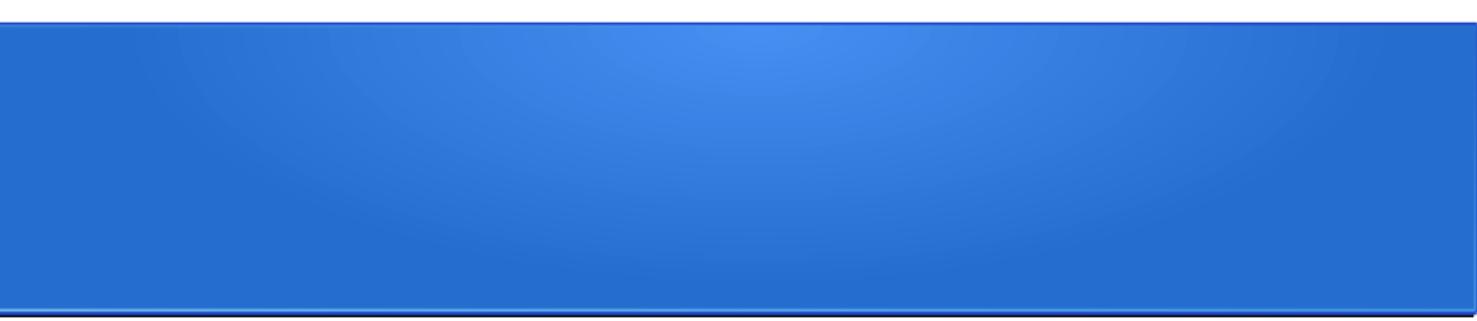
fisica.professordanilo.com



LENTES ESFÉRICAS



LENTEs CONVERGENTES



Primeiro caso

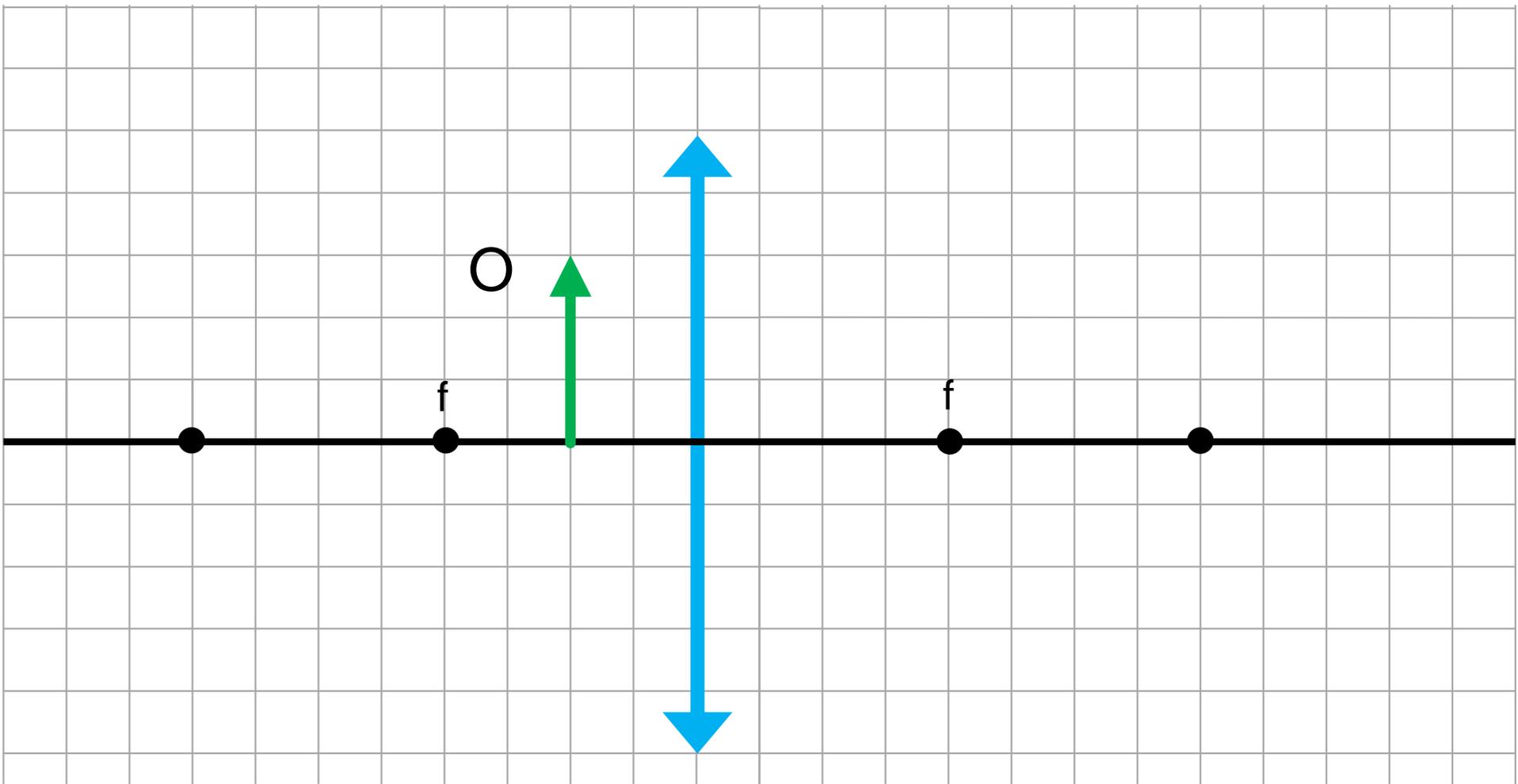


Figura 1: Objeto entre o vértice e o foco

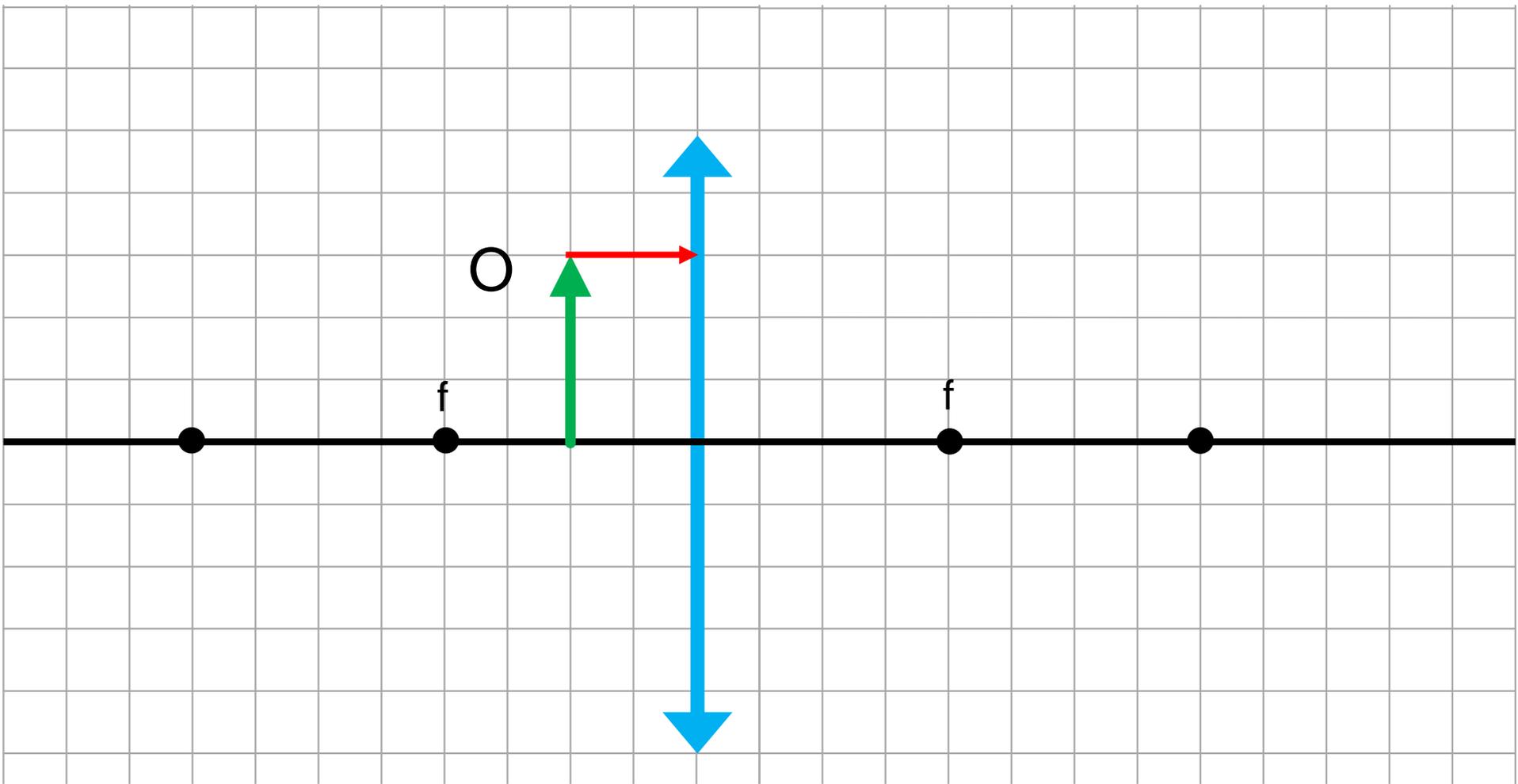


Figura 1: Objeto entre o vértice e o foco

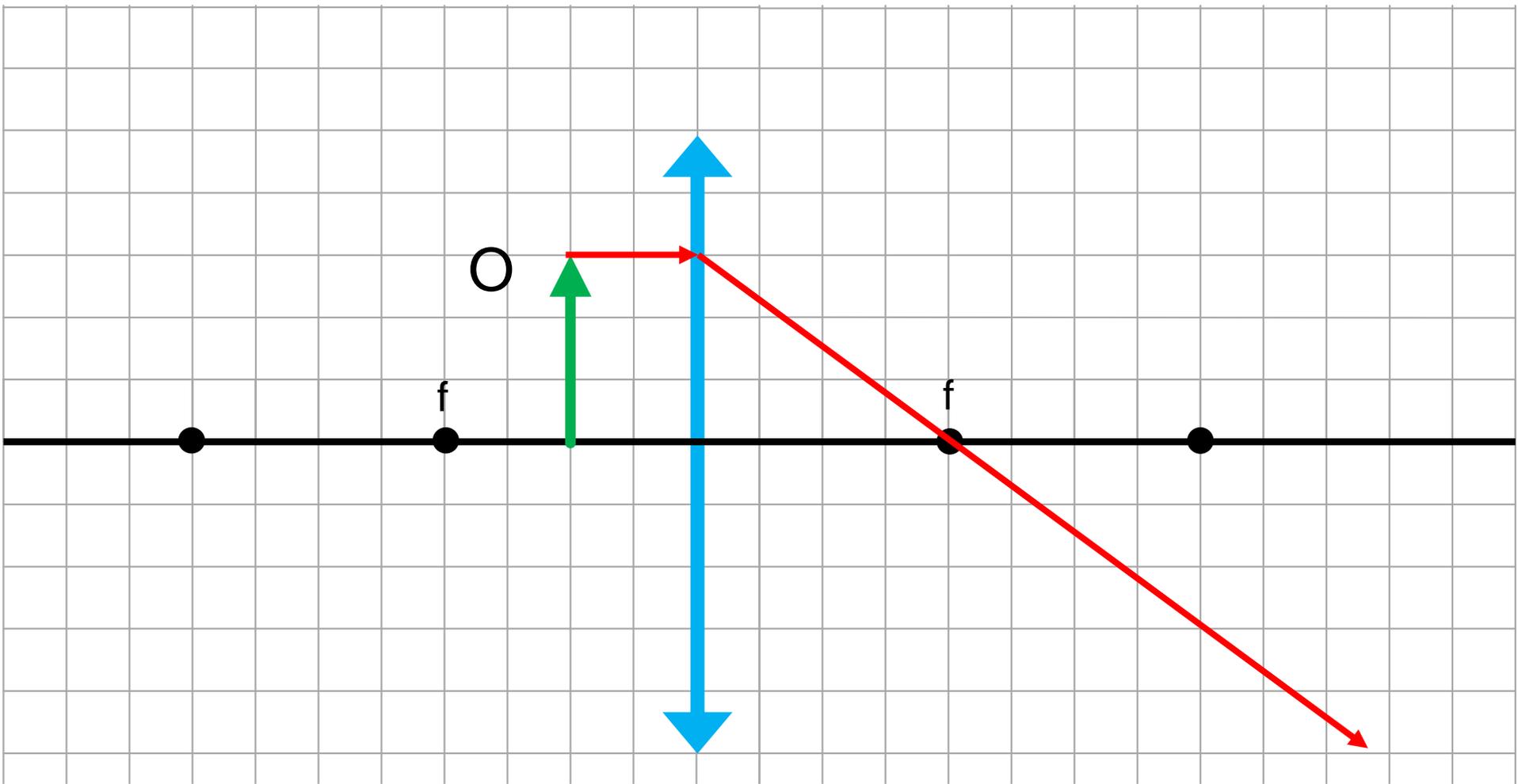


Figura 1: Objeto entre o vértice e o foco

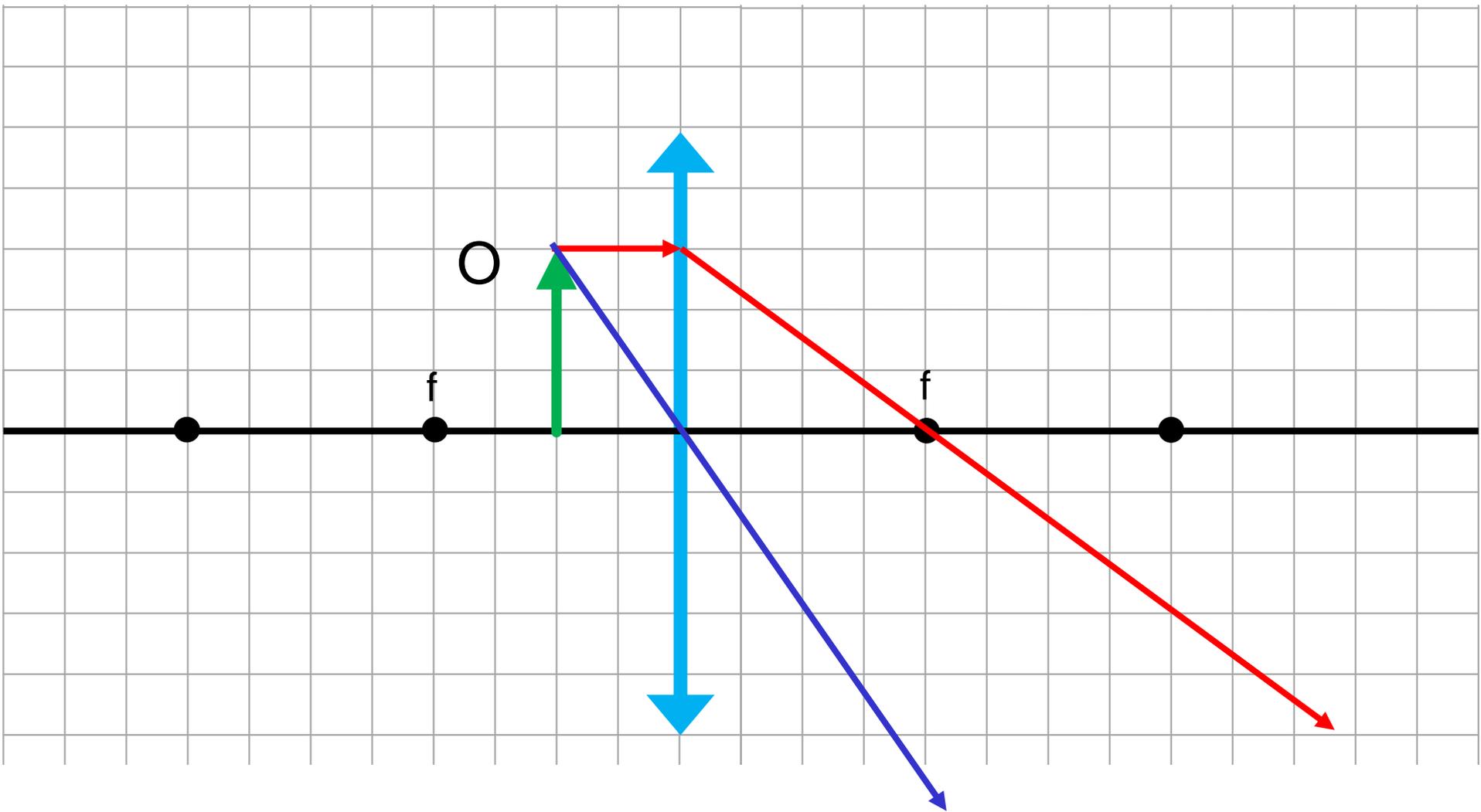


Figura 1: Objeto entre o vértice e o foco

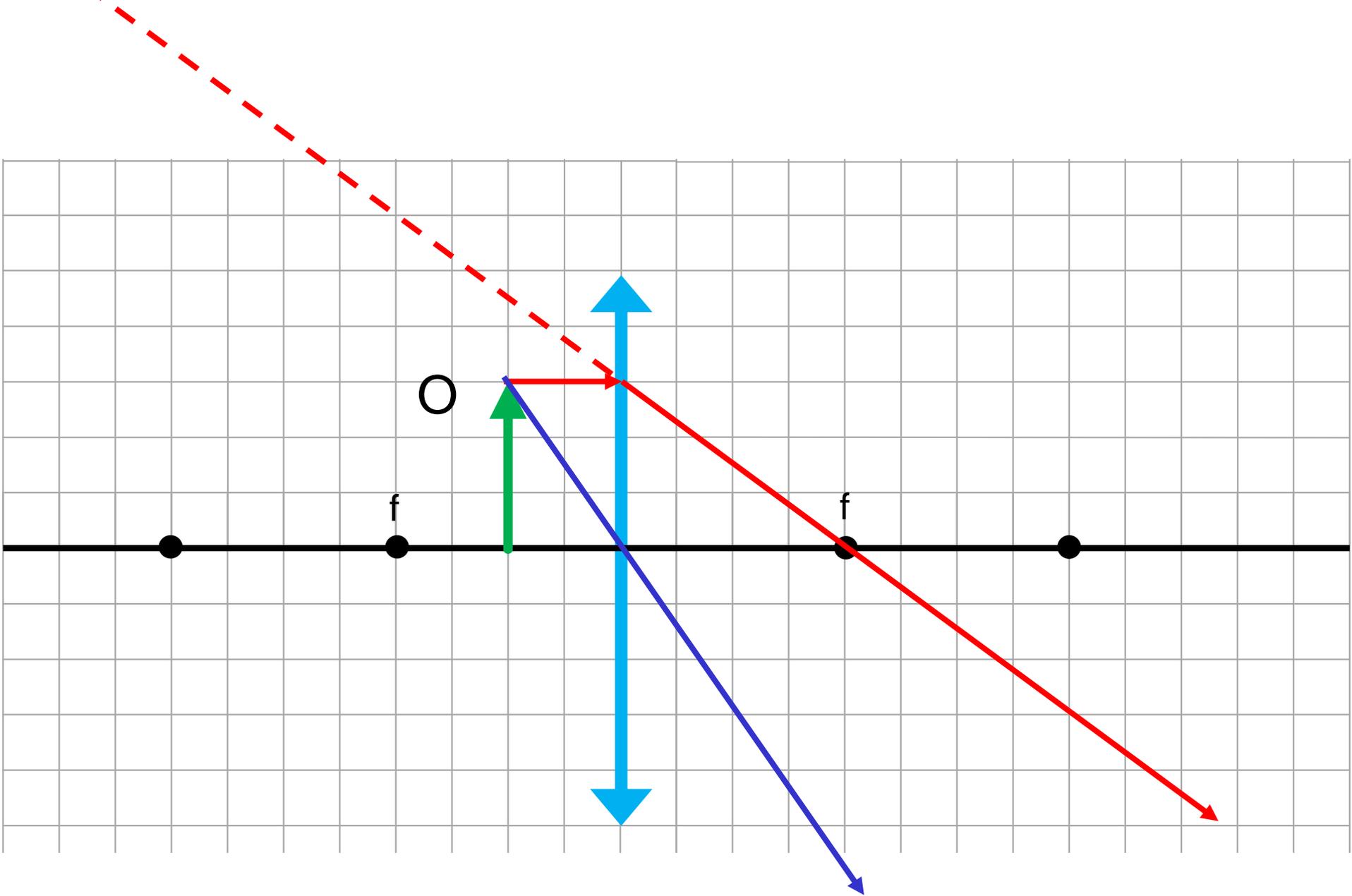


Figura 1: Objeto entre o vértice e o foco

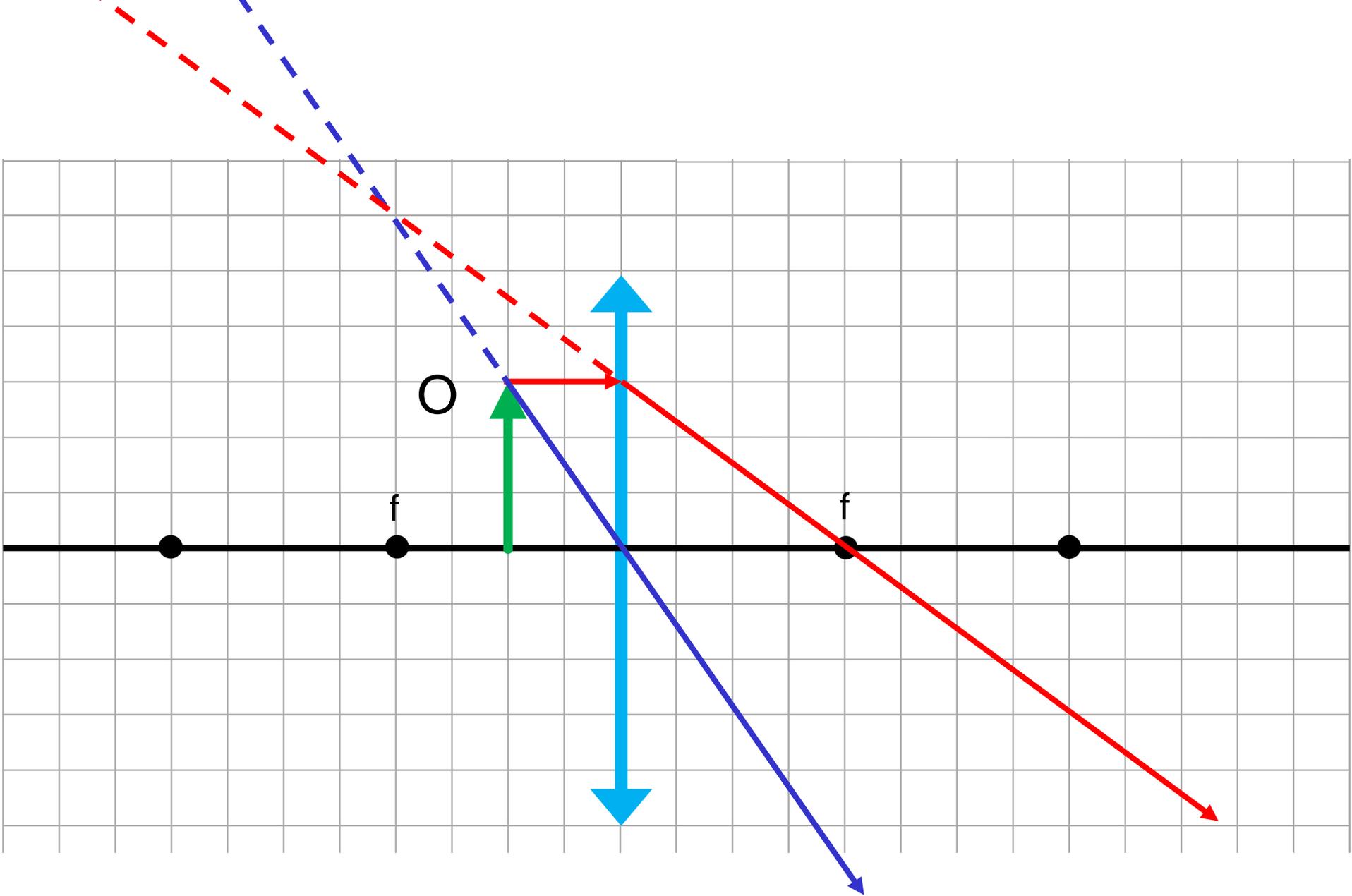


Figura 1: Objeto entre o vértice e o foco

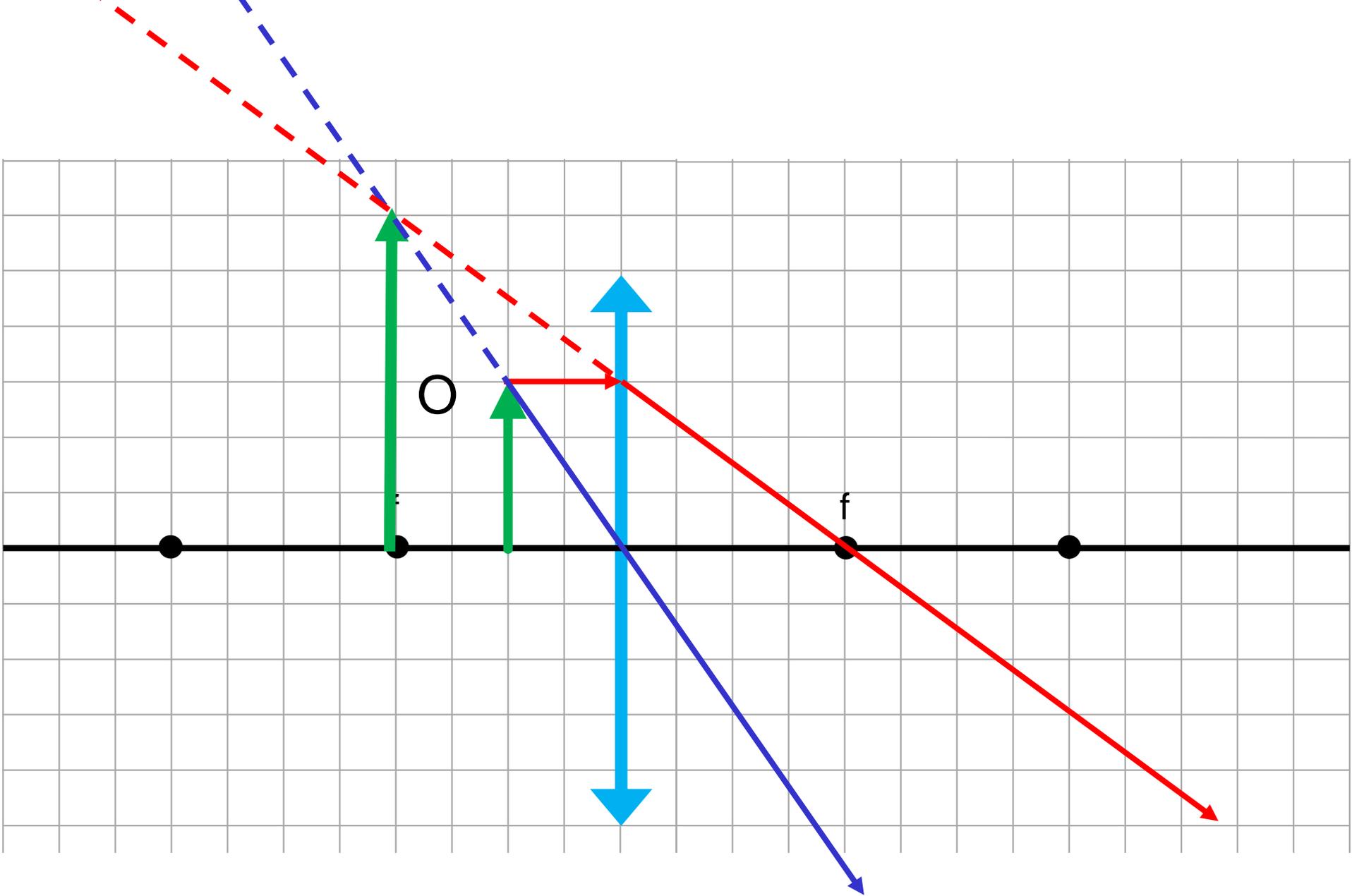


Figura 1: Objeto entre o vértice e o foco

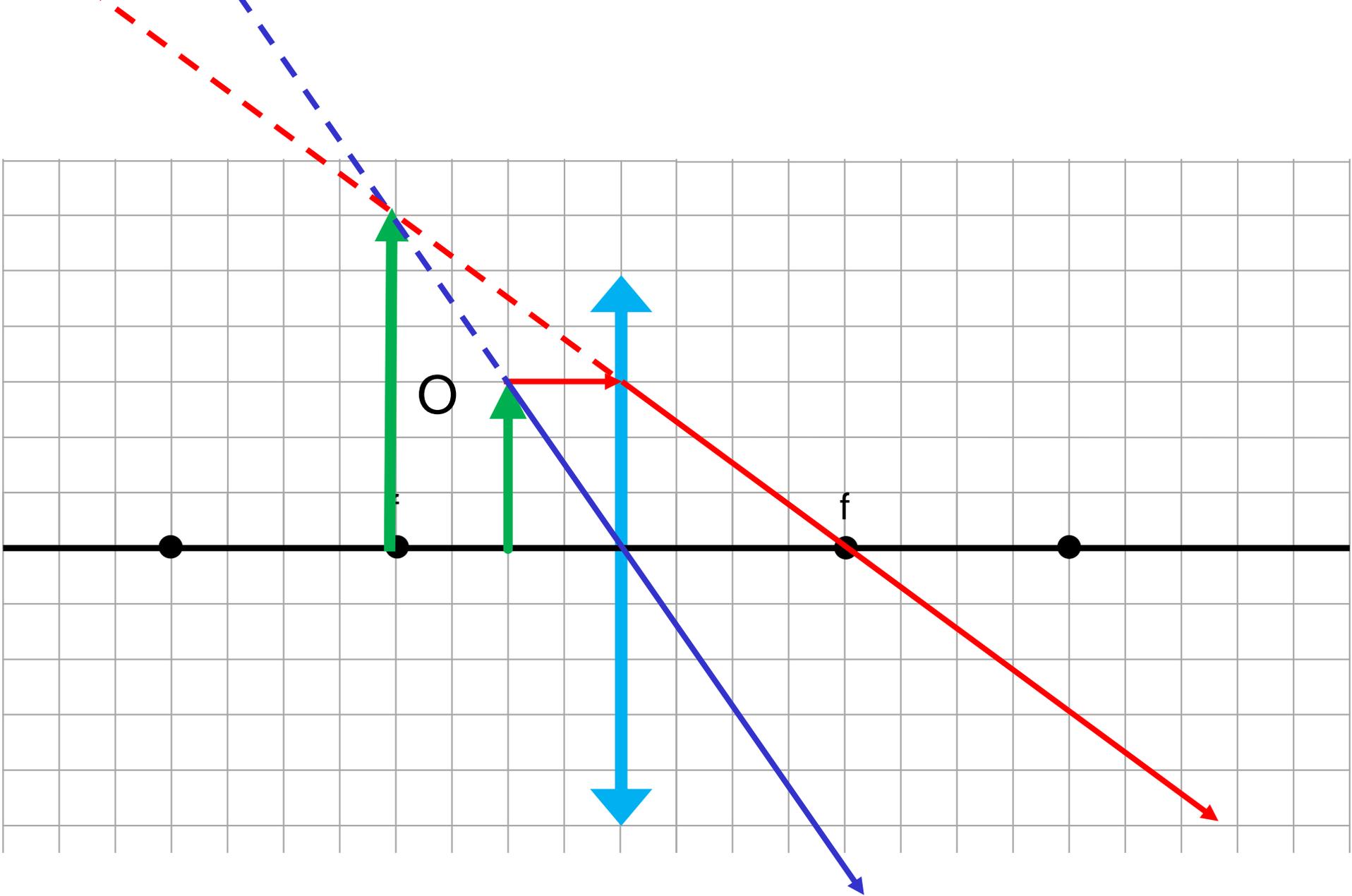


Figura 1: Objeto entre o vértice e o foco

CLASSIFICAÇÃO: Imagem VIRTUAL

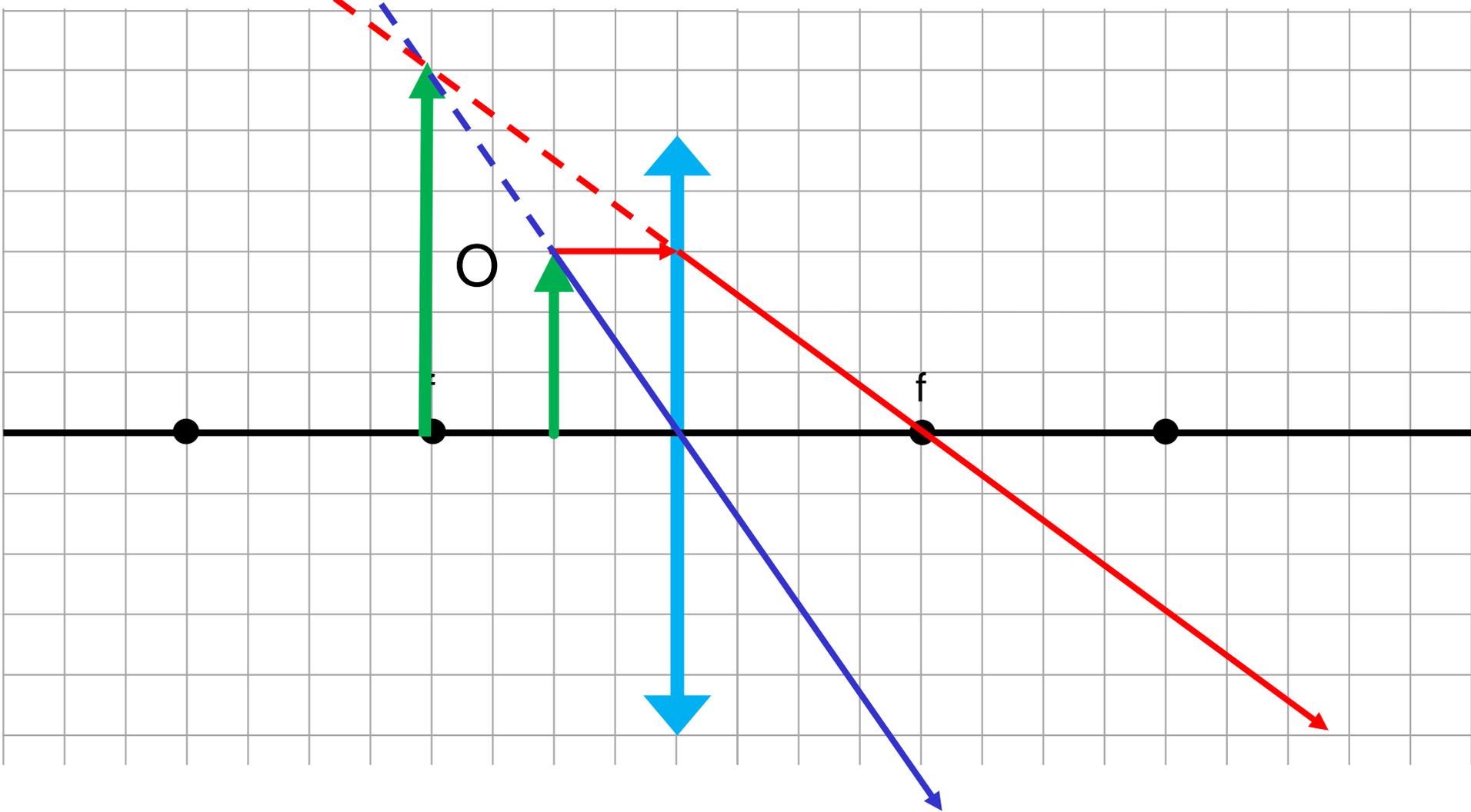


Figura 1: Objeto entre o vértice e o foco

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA

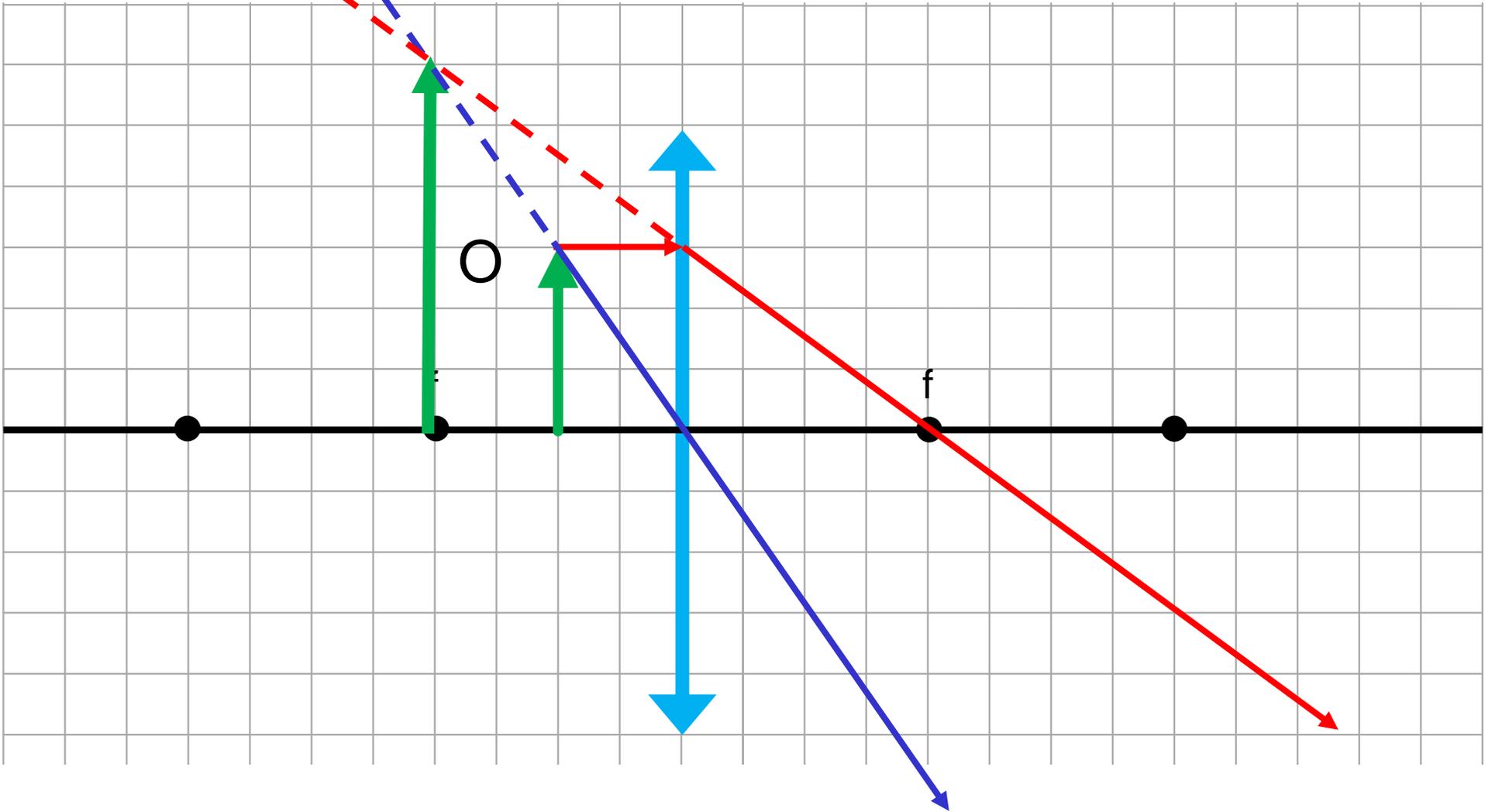


Figura 1: Objeto entre o vértice e o foco

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA
MAIOR

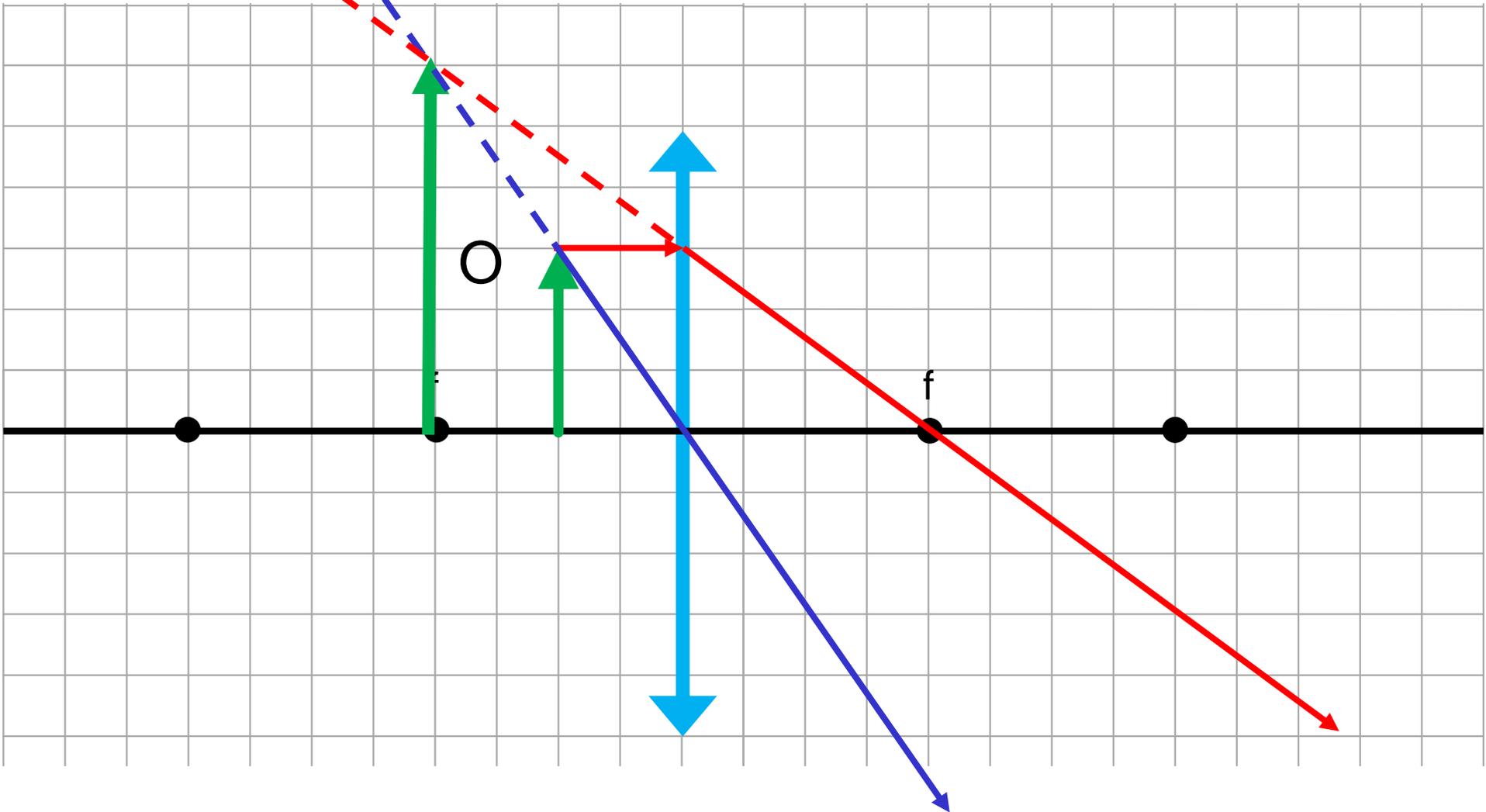


Figura 1: Objeto entre o vértice e o foco

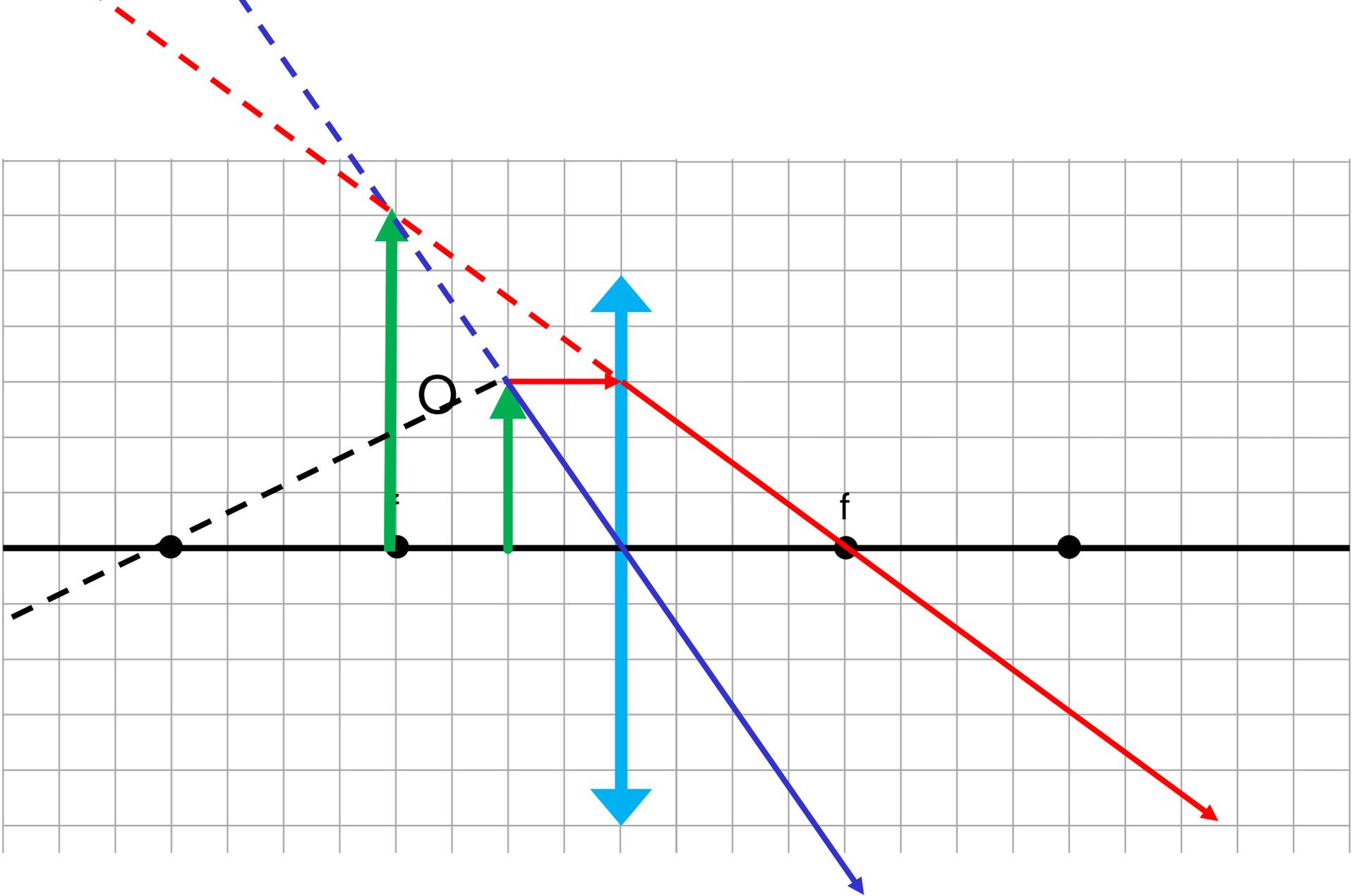


Figura 1: Objeto entre o vértice e o foco

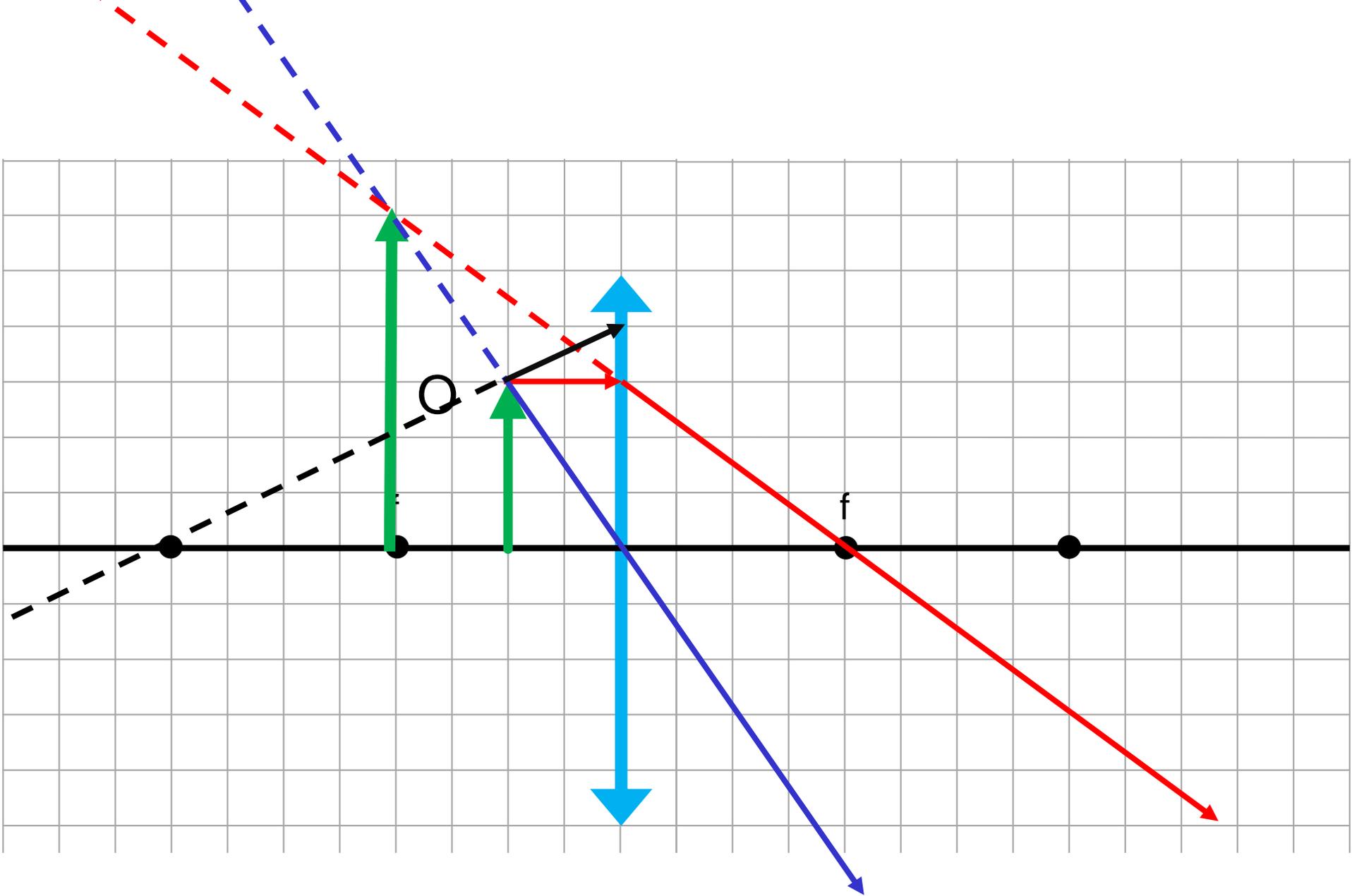


Figura 1: Objeto entre o vértice e o foco

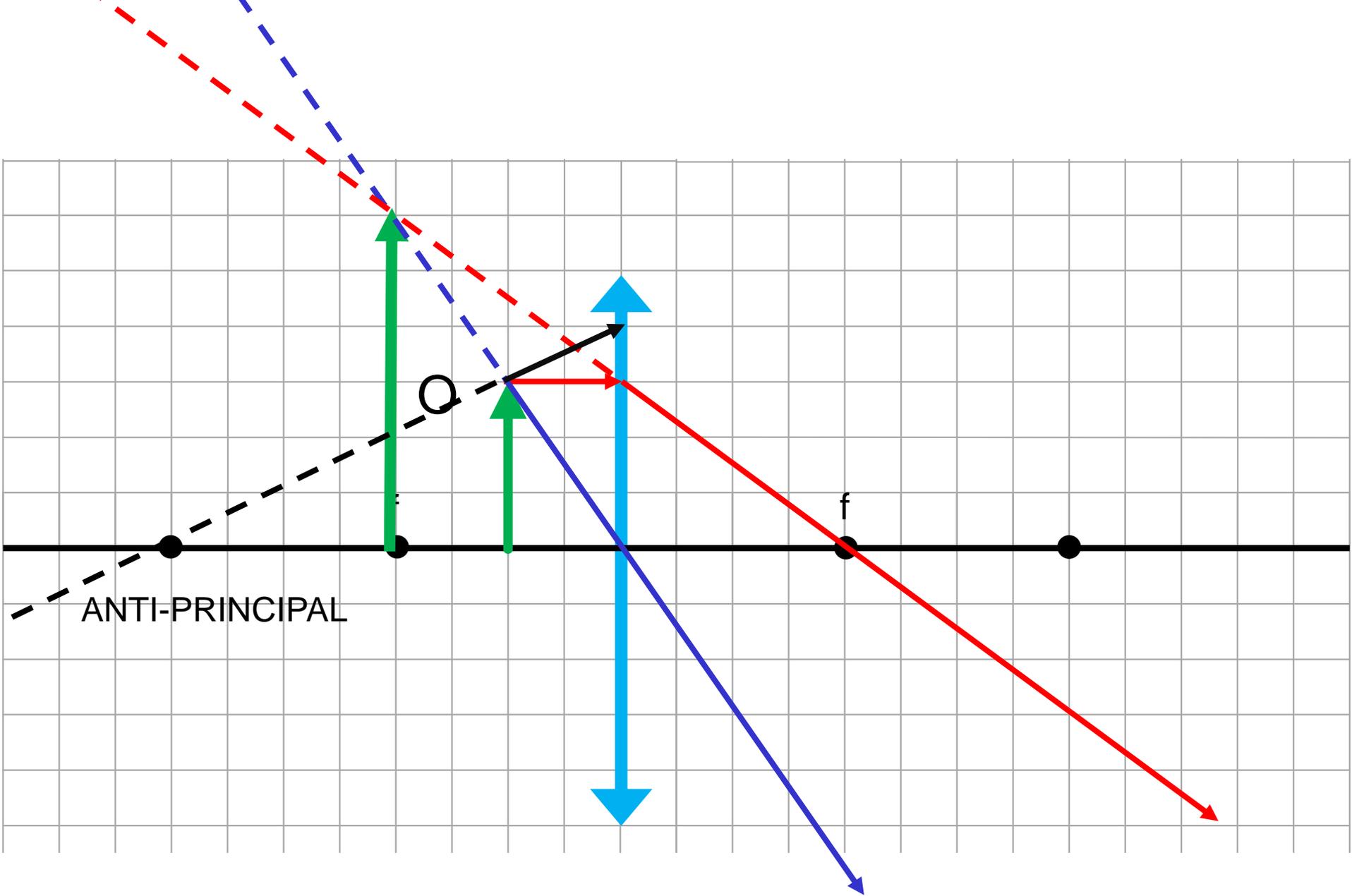


Figura 1: Objeto entre o vértice e o foco

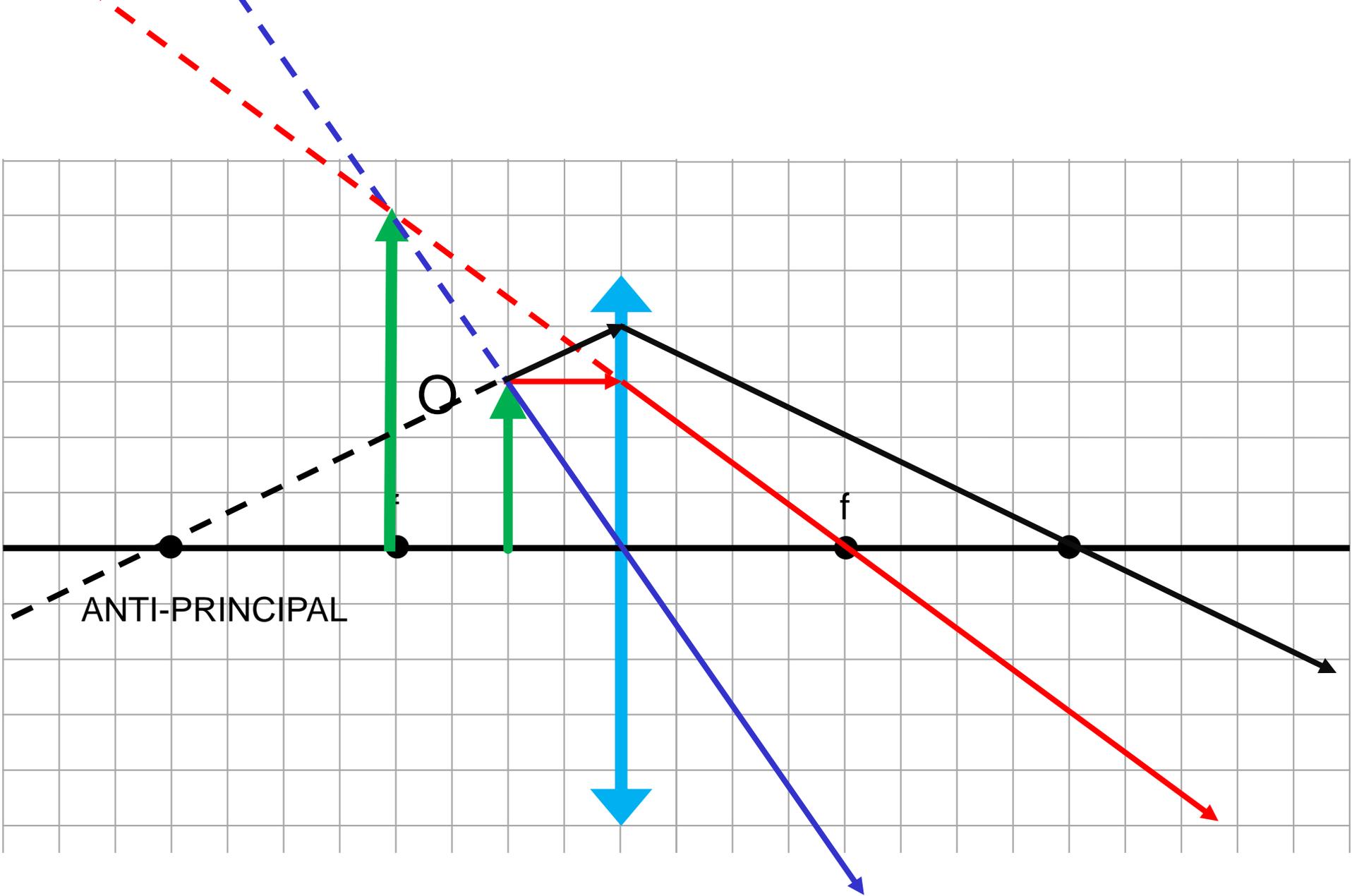


Figura 1: Objeto entre o vértice e o foco

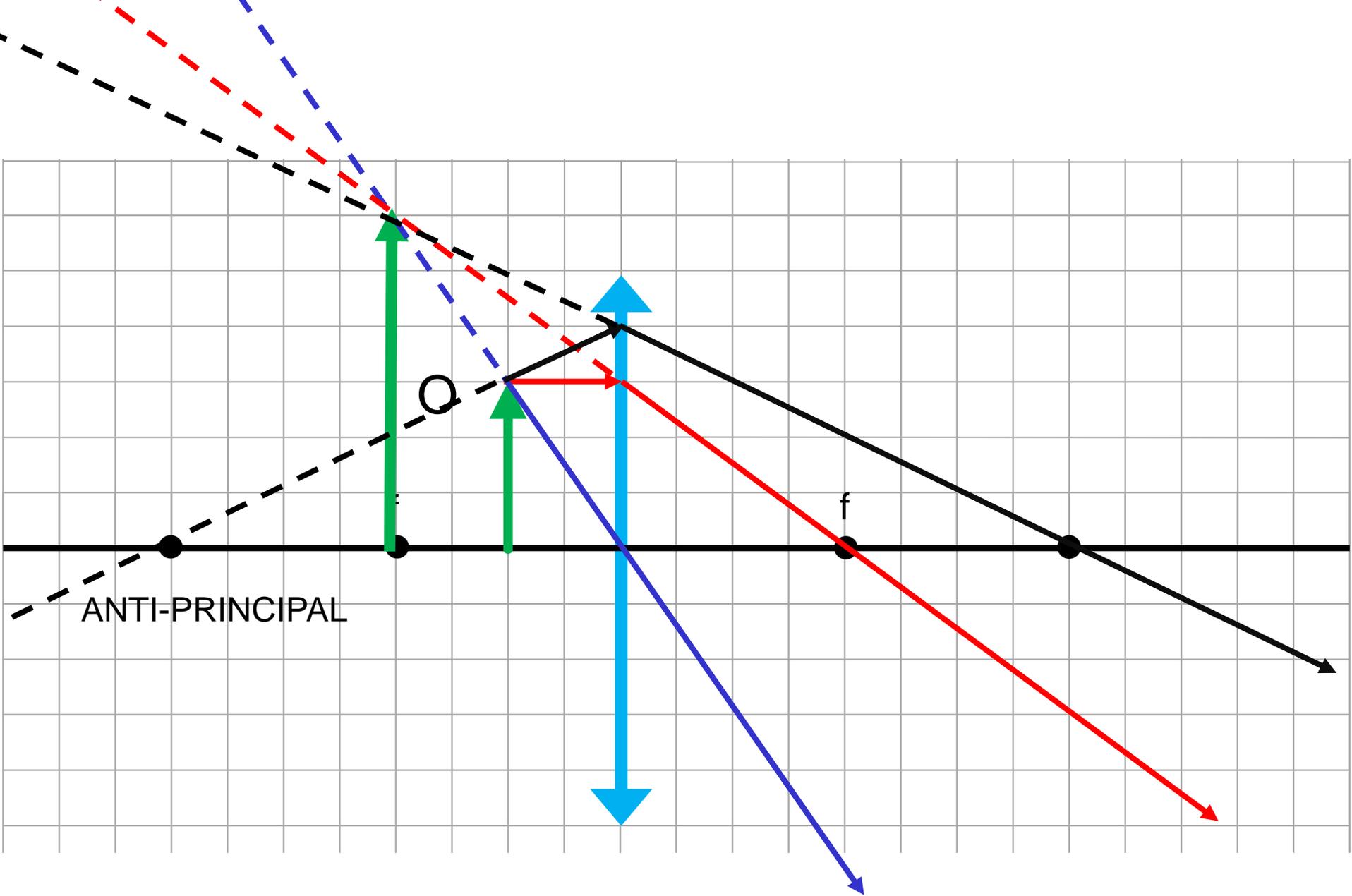


Figura 1: Objeto entre o vértice e o foco

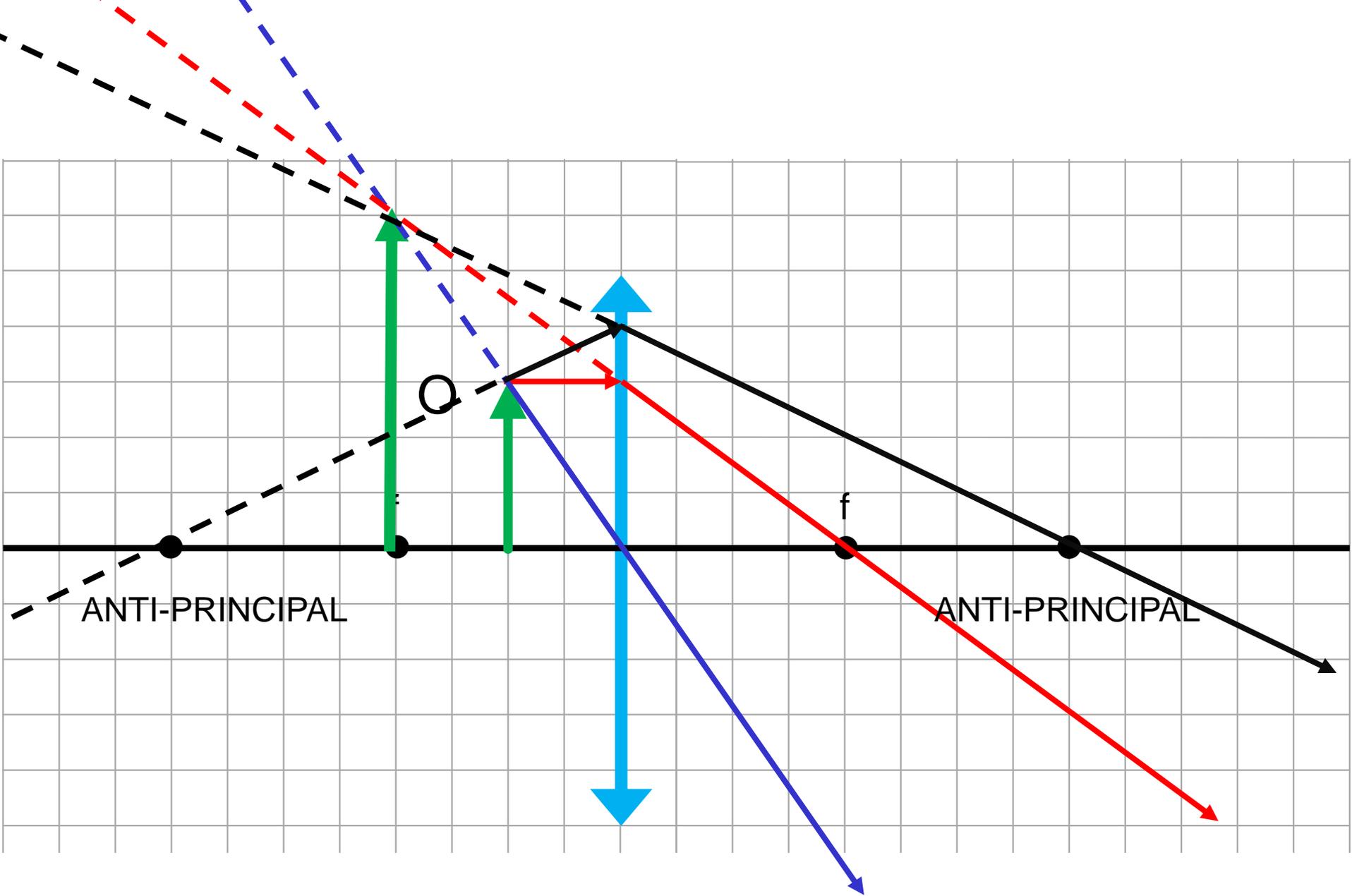


Figura 1: Objeto entre o vértice e o foco

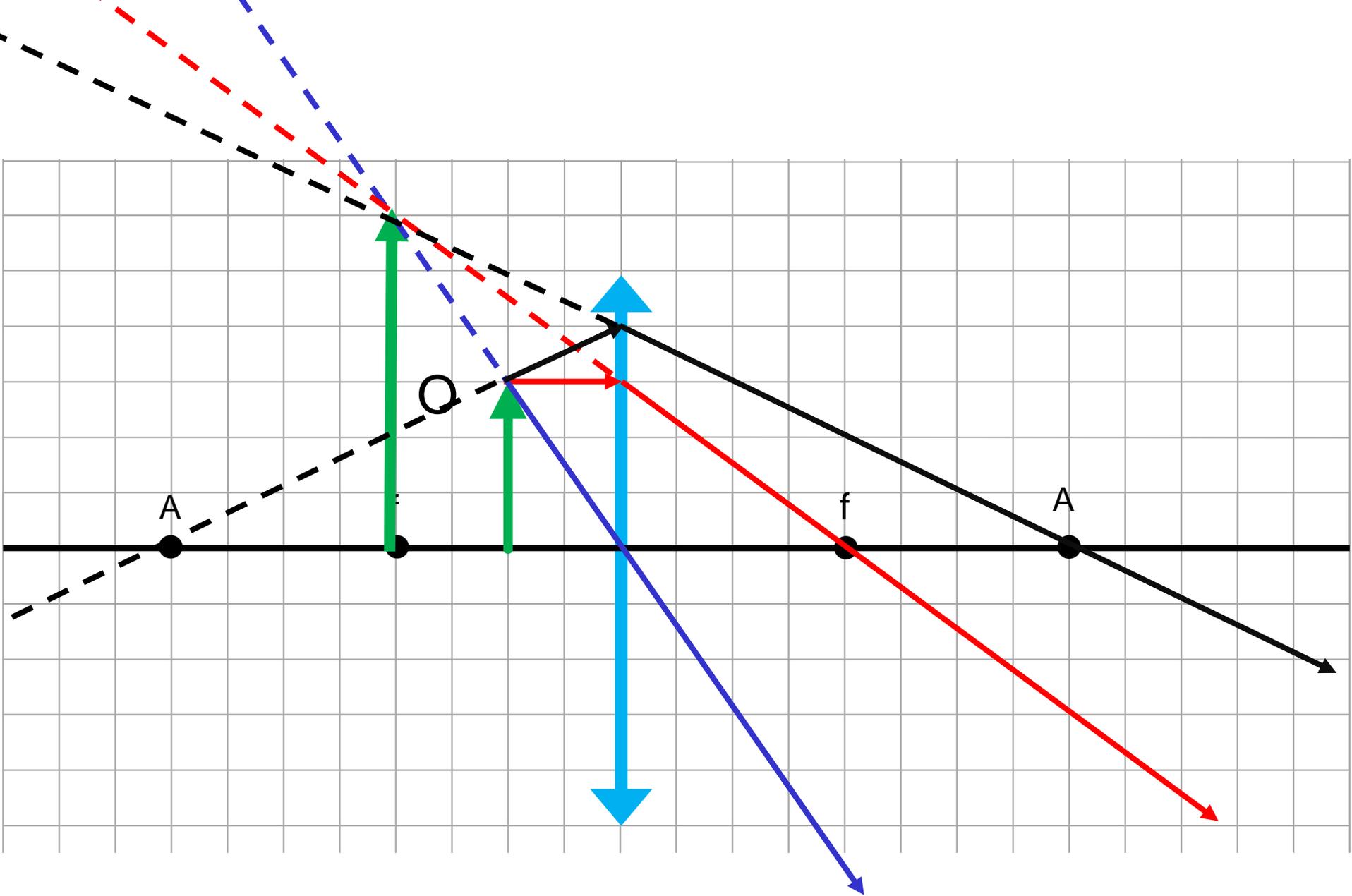
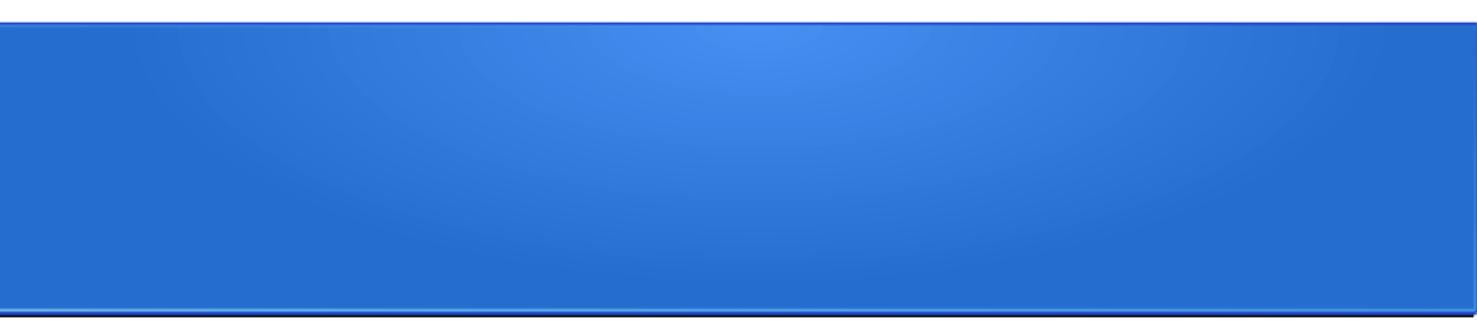


Figura 1: Objeto entre o vértice e o foco



Segundo caso

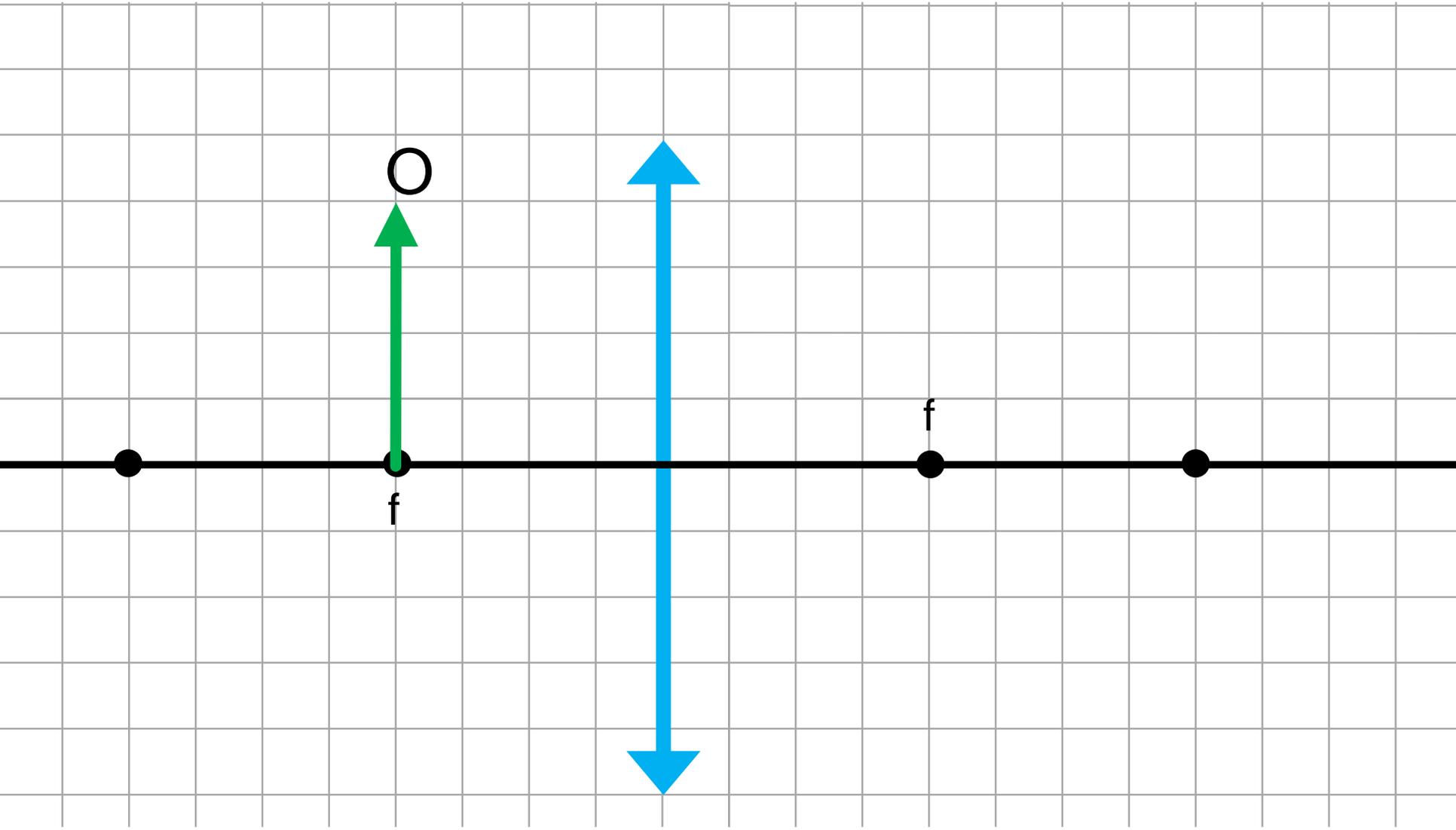


Figura 2: Objeto no foco

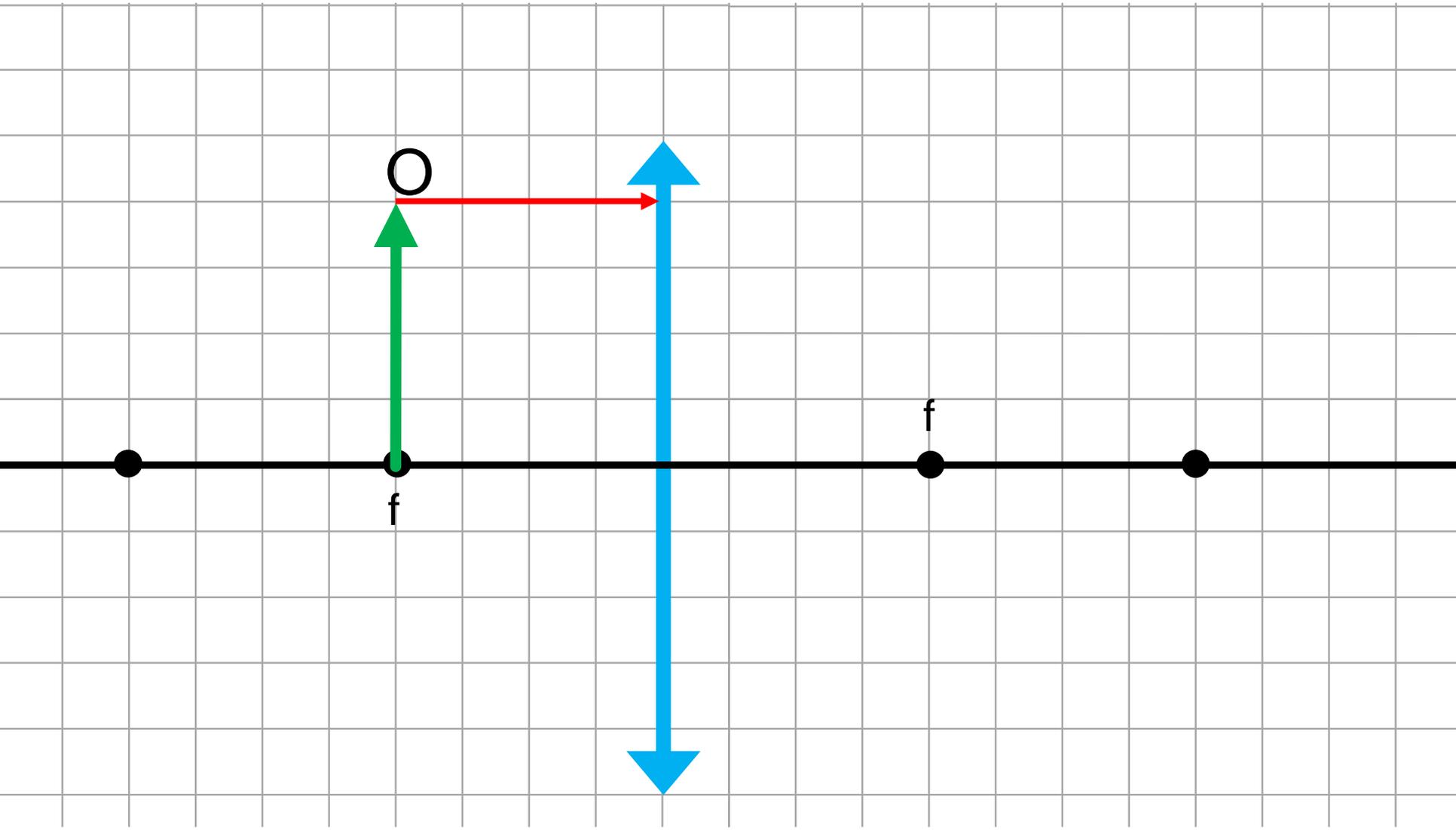


Figura 2: Objeto no foco

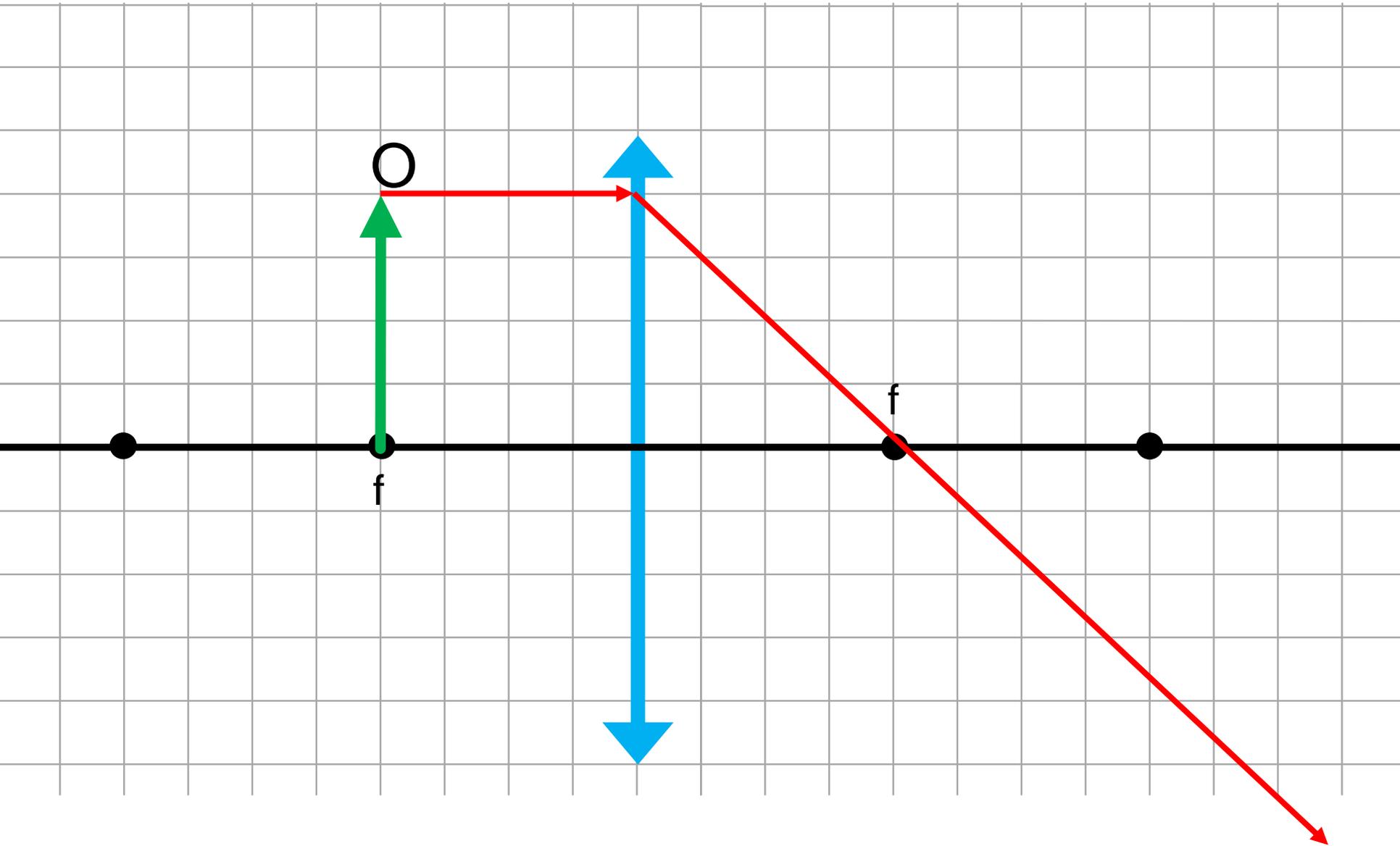


Figura 2: Objeto no foco

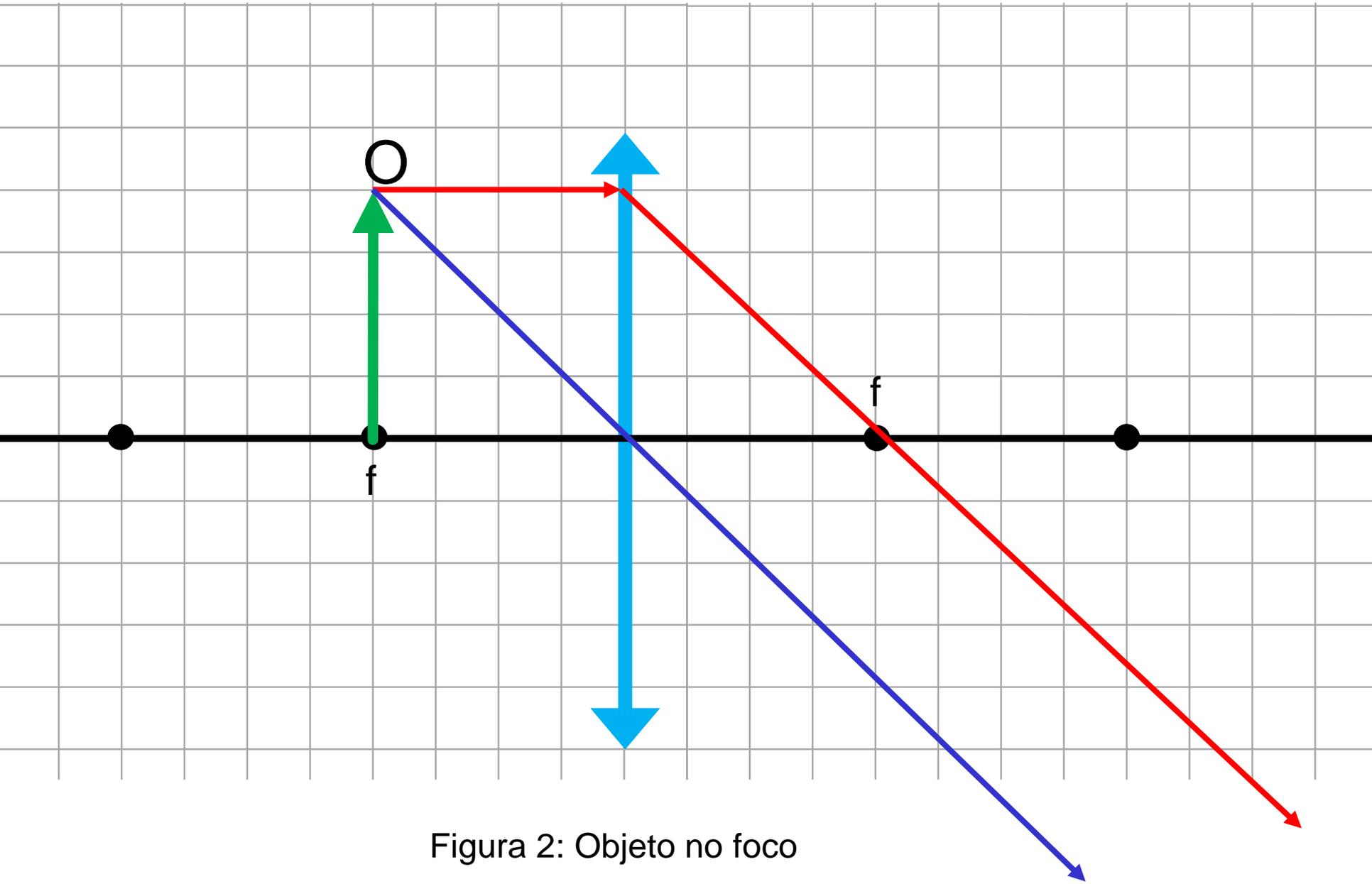


Figura 2: Objeto no foco

IMAGEM IMPRÓPRIA

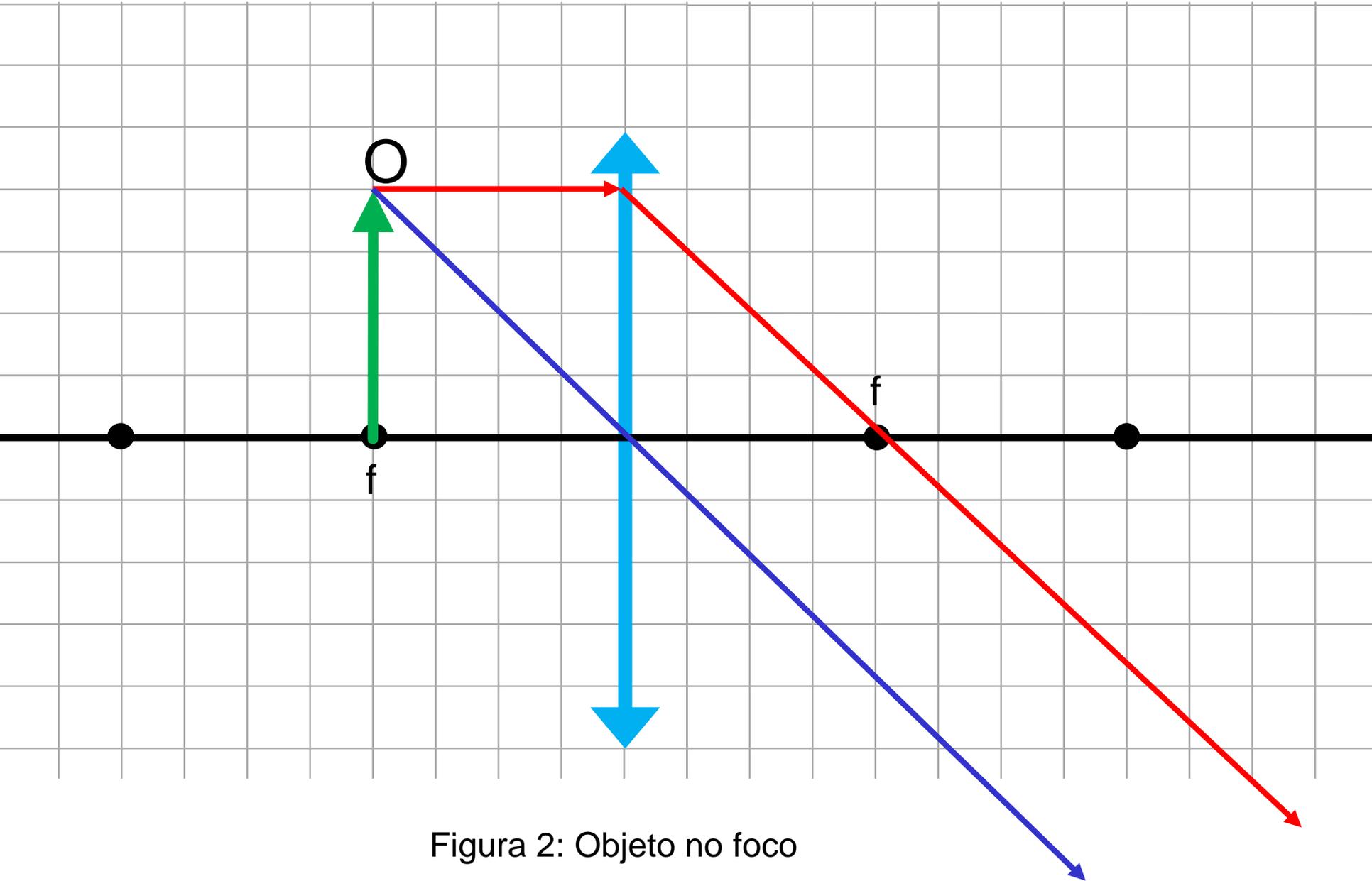
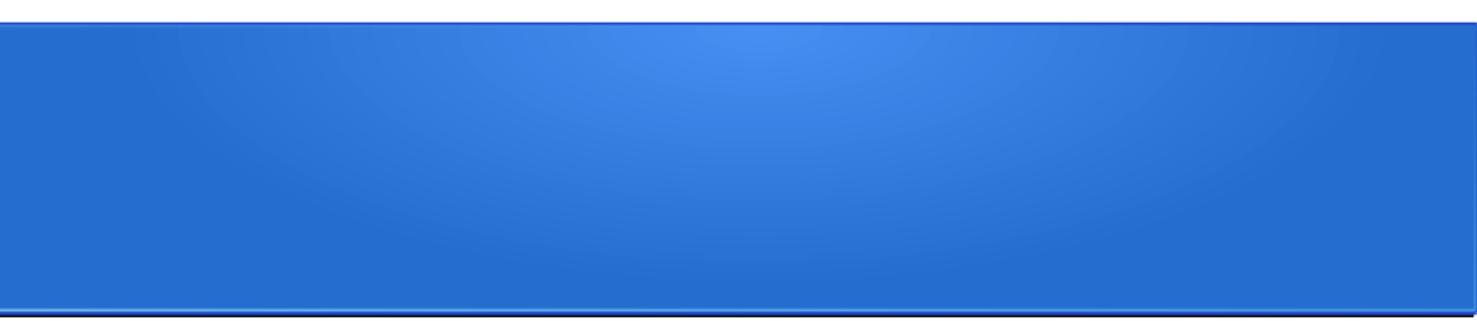


Figura 2: Objeto no foco



Terceiro caso

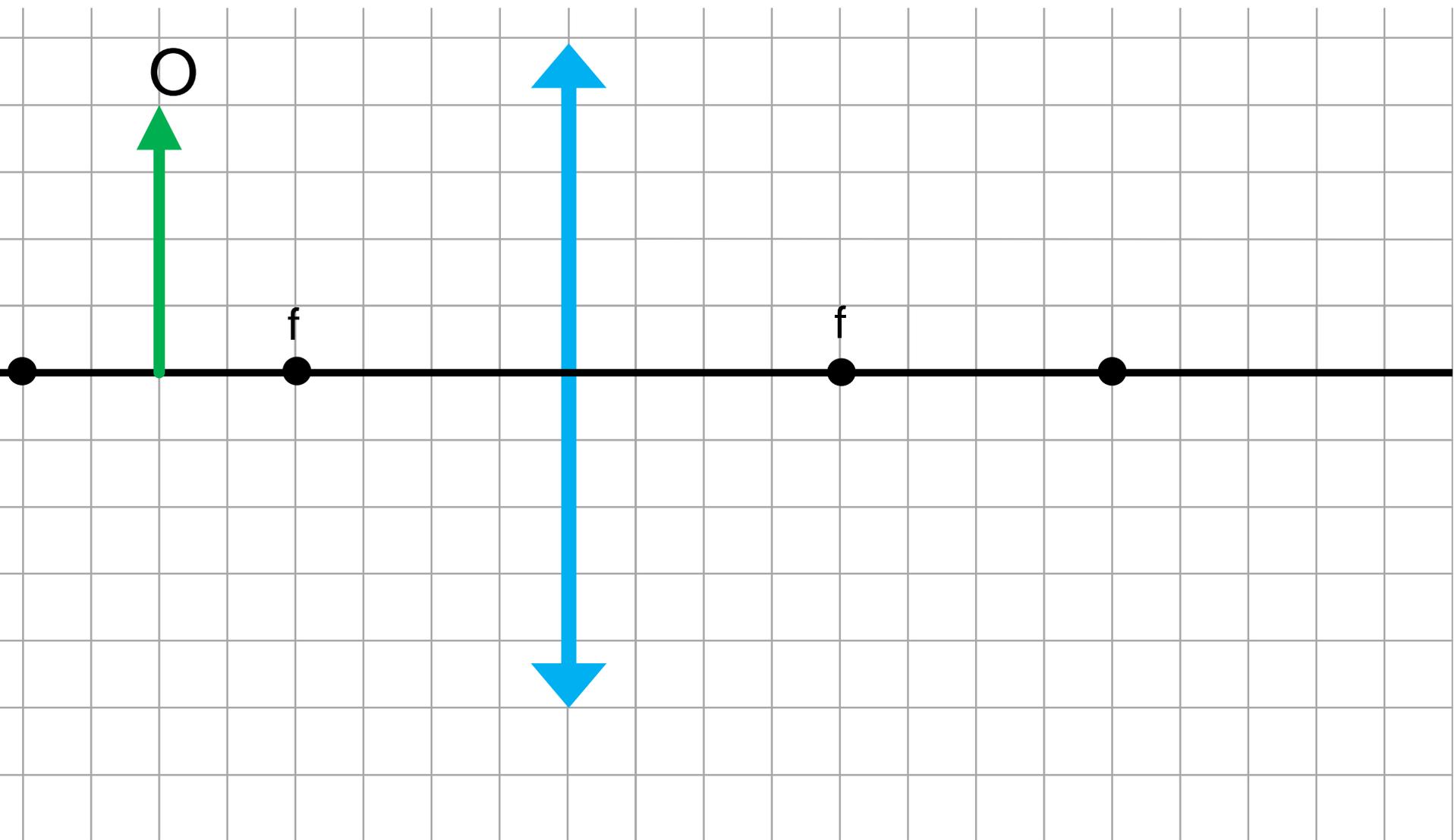


Figura 3: Objeto entre o foco e o anti-principal

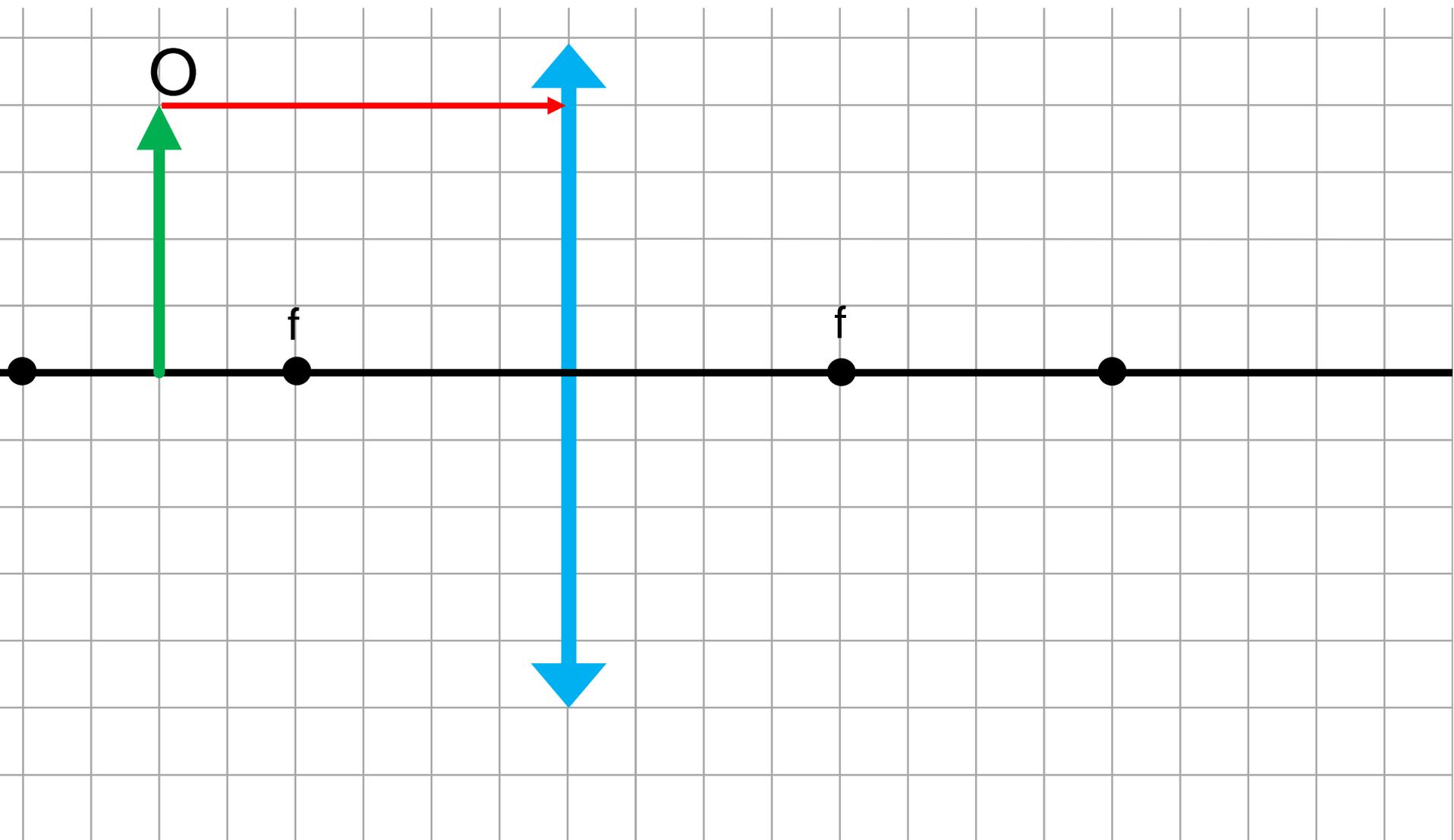


Figura 3: Objeto entre o foco e o anti-principal

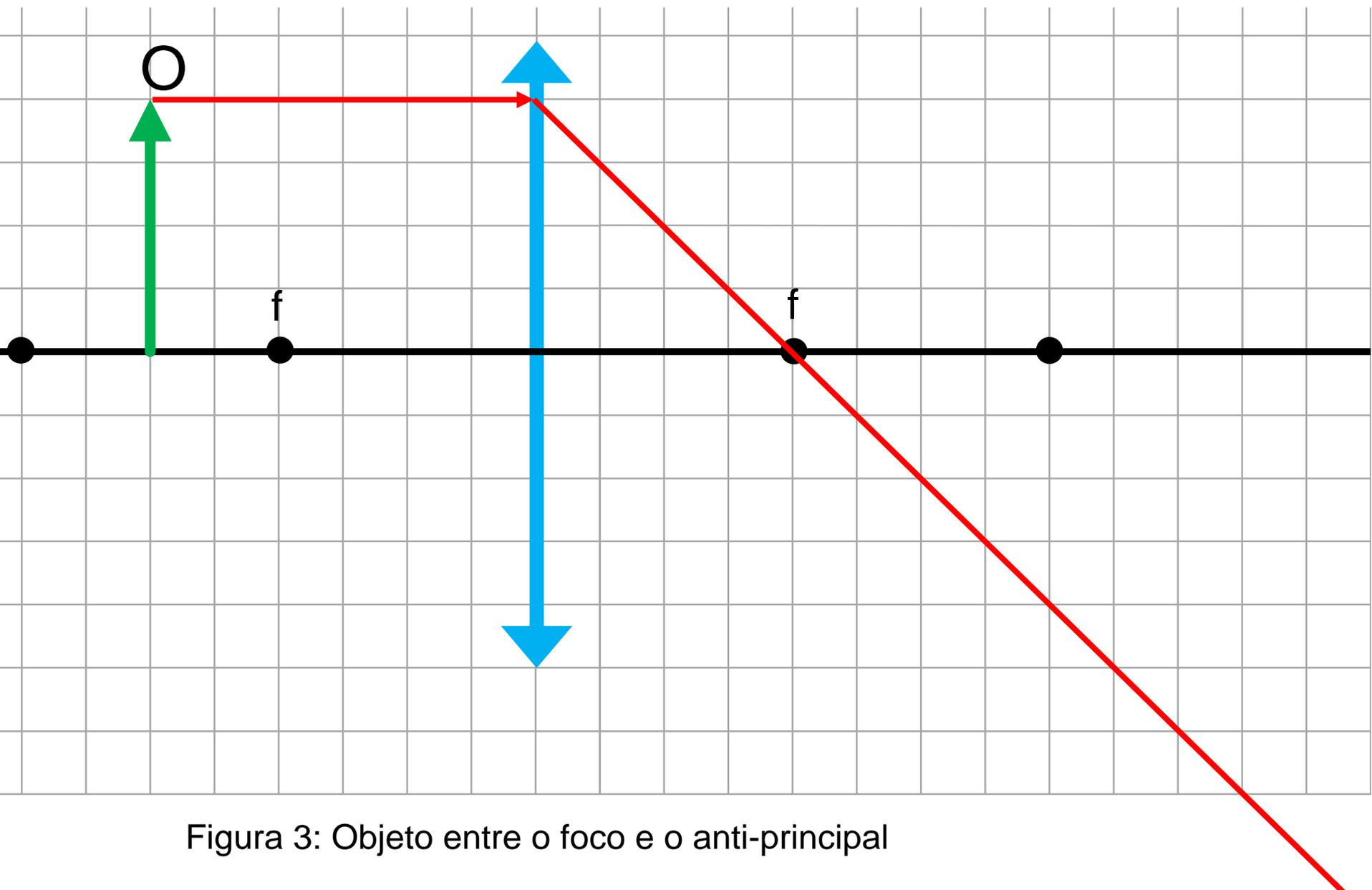


Figura 3: Objeto entre o foco e o anti-principal

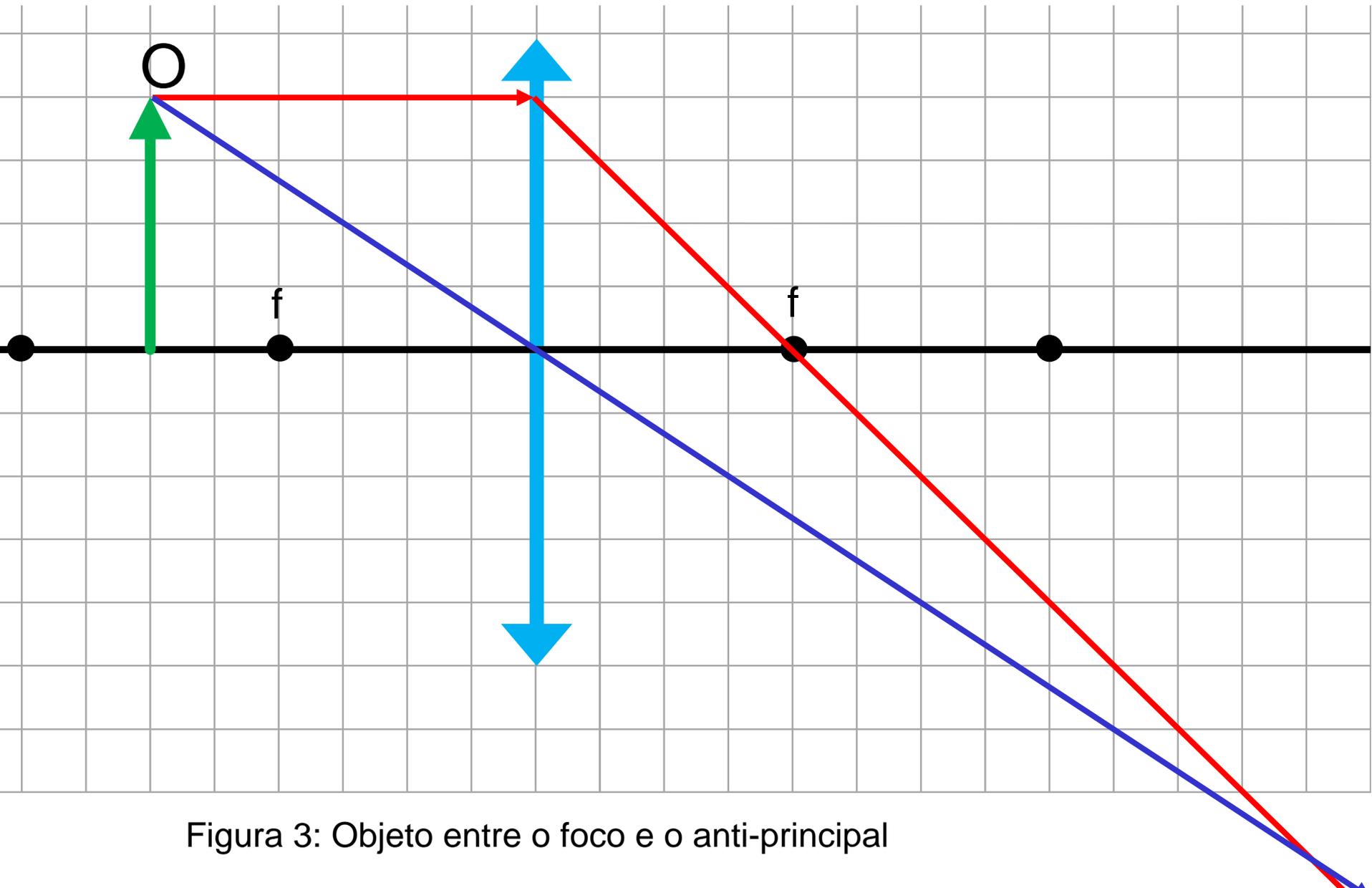


Figura 3: Objeto entre o foco e o anti-principal

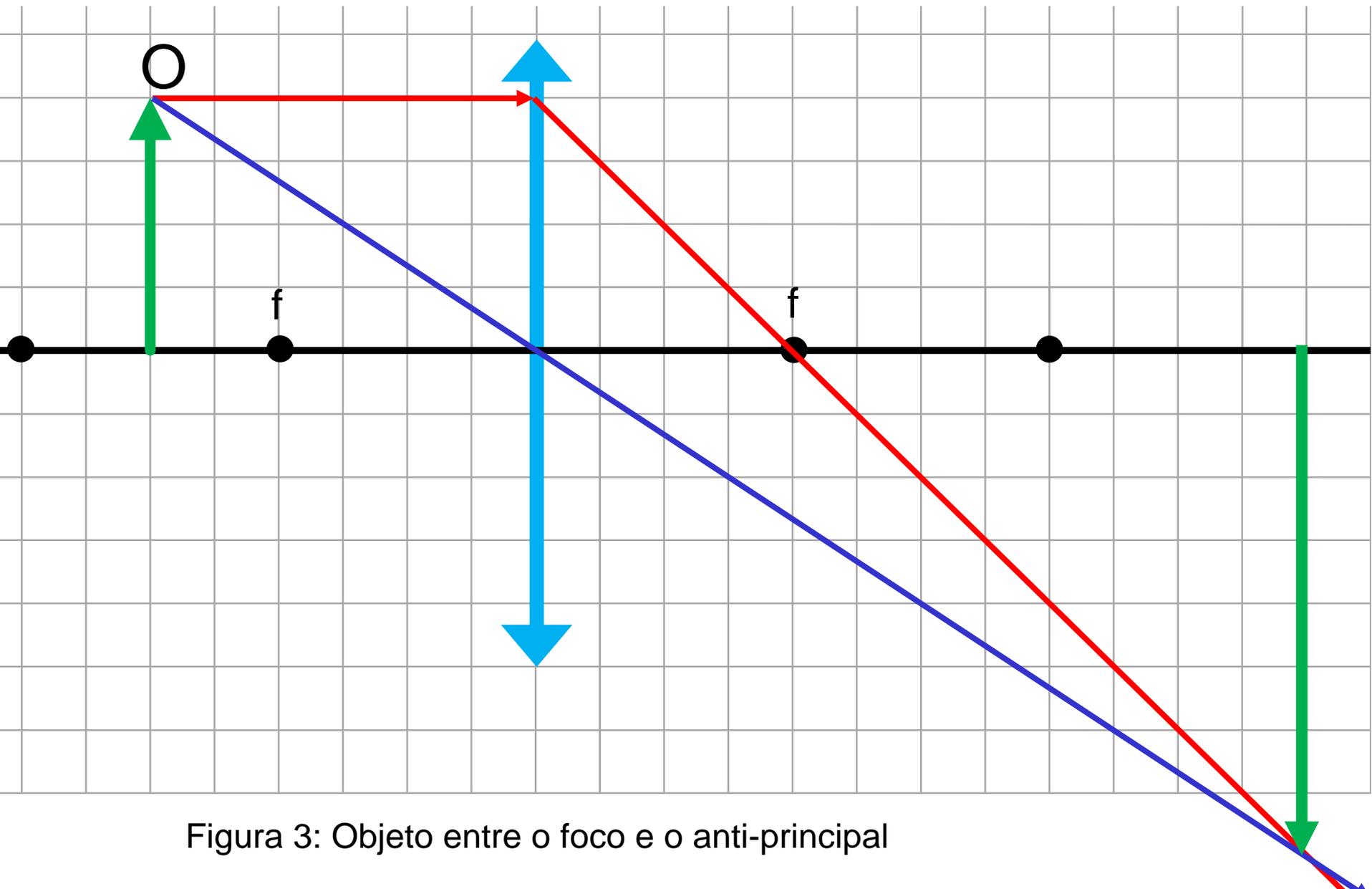


Figura 3: Objeto entre o foco e o anti-principal

CLASSIFICAÇÃO: Imagem REAL

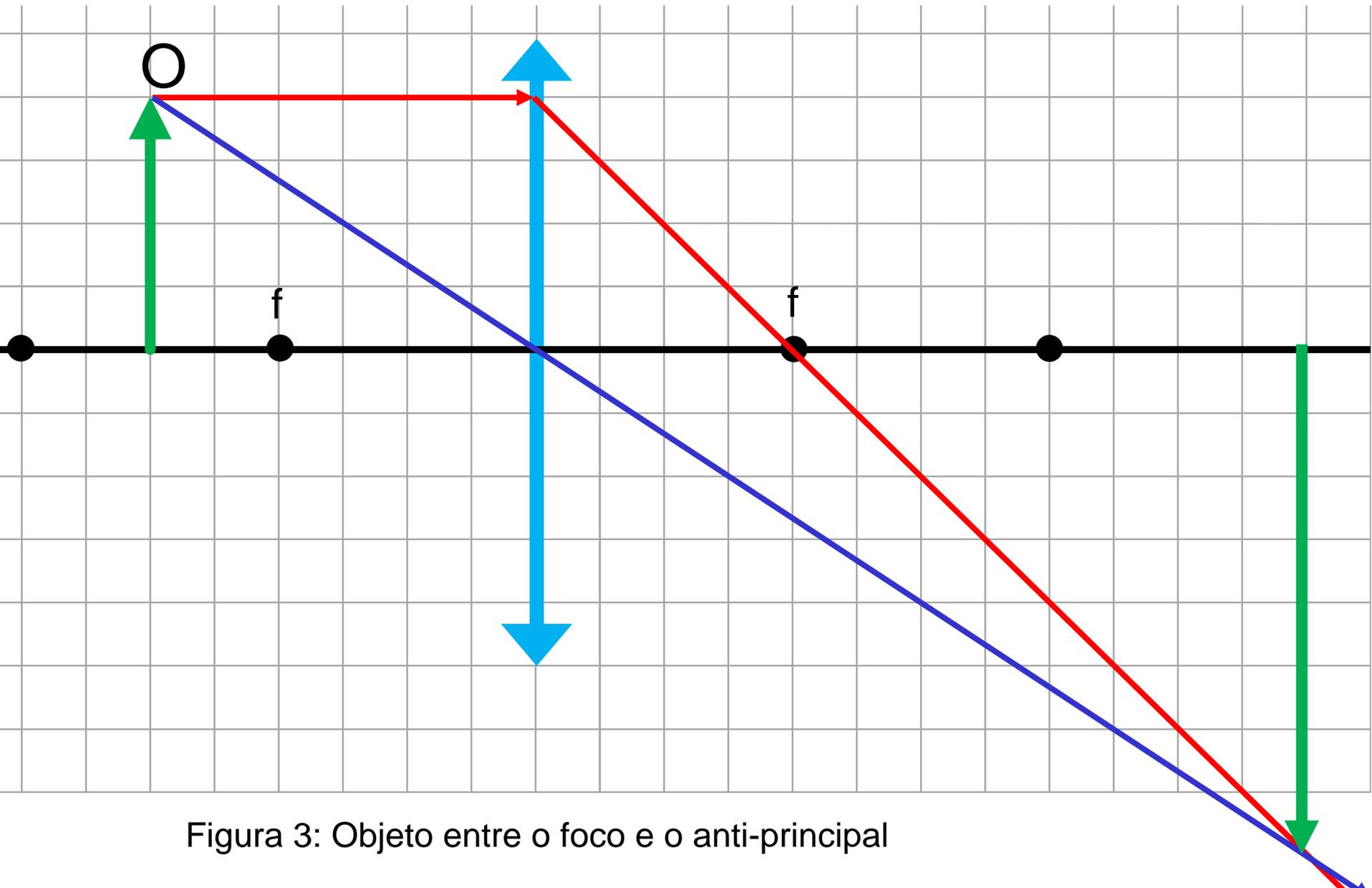


Figura 3: Objeto entre o foco e o anti-principal

CLASSIFICAÇÃO:

Imagem

REAL

INVERTIDA

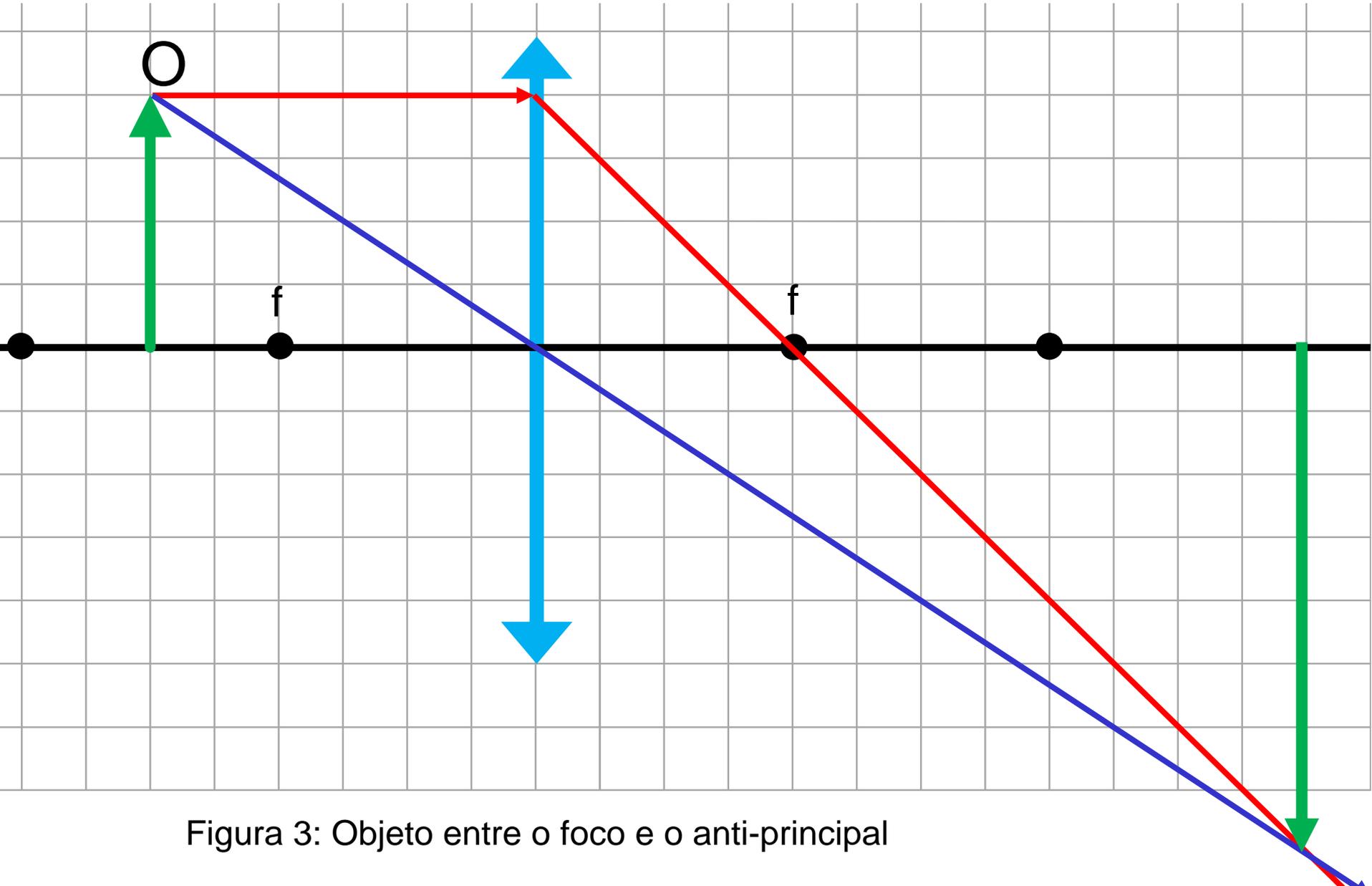


Figura 3: Objeto entre o foco e o anti-principal

CLASSIFICAÇÃO:

Imagem

REAL

INVERTIDA

MAIOR

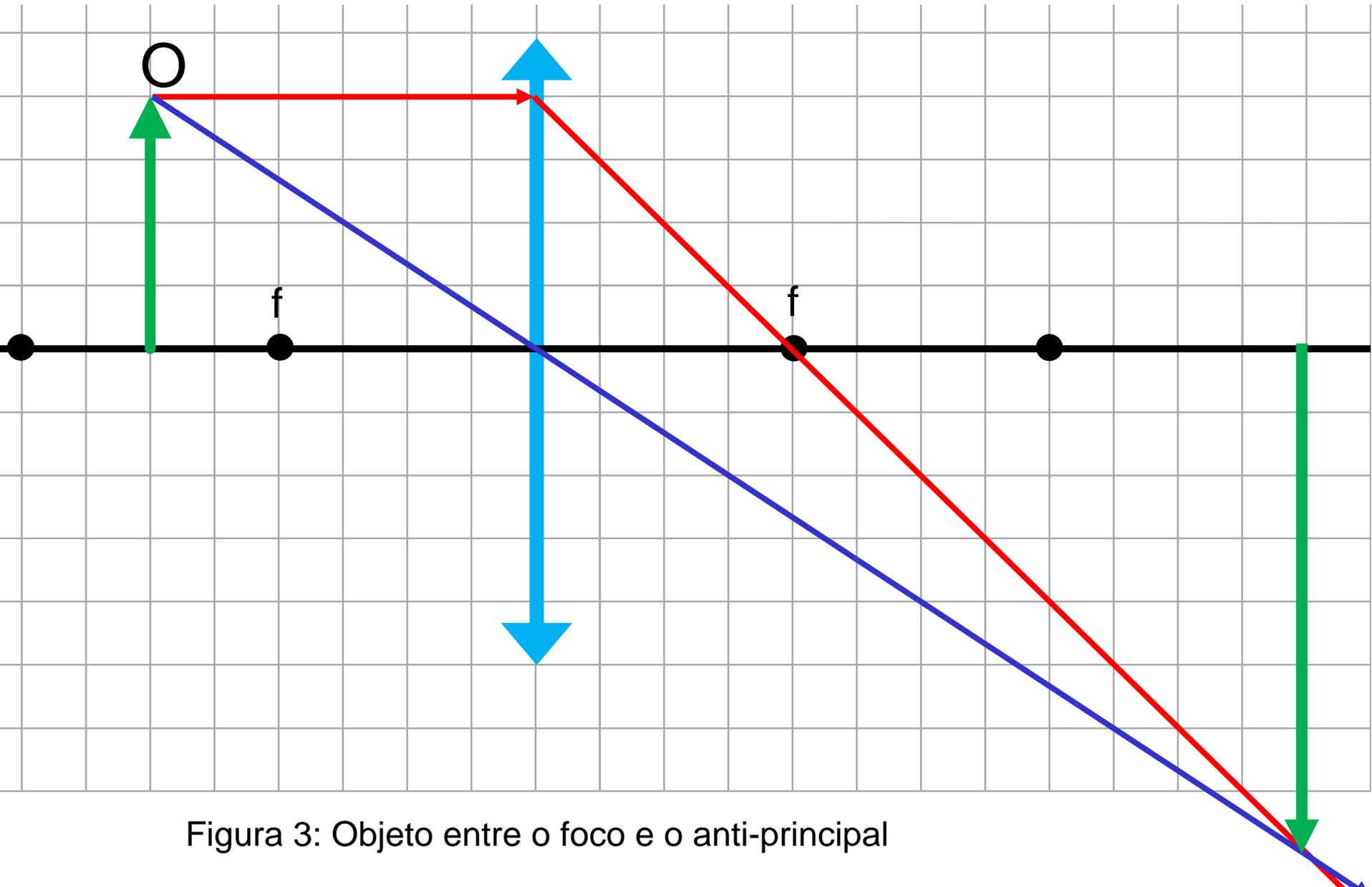
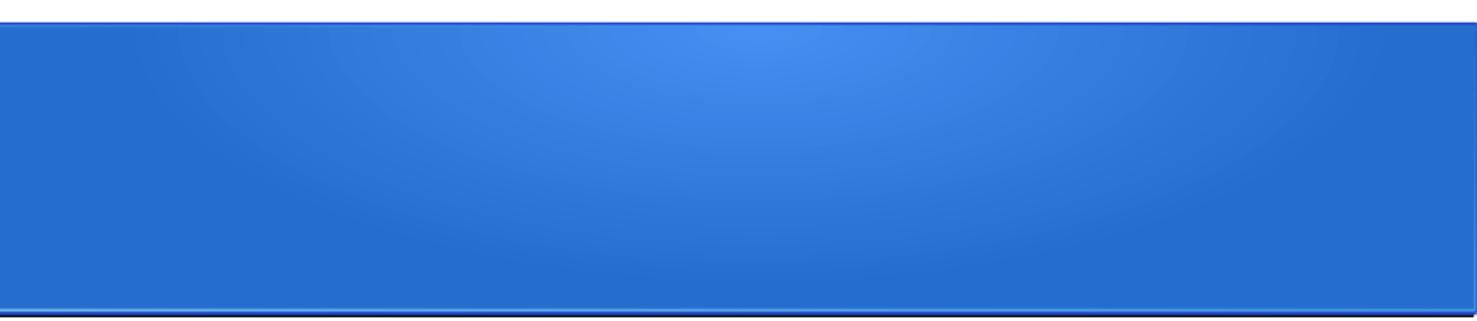


Figura 3: Objeto entre o foco e o anti-principal



Quarto caso

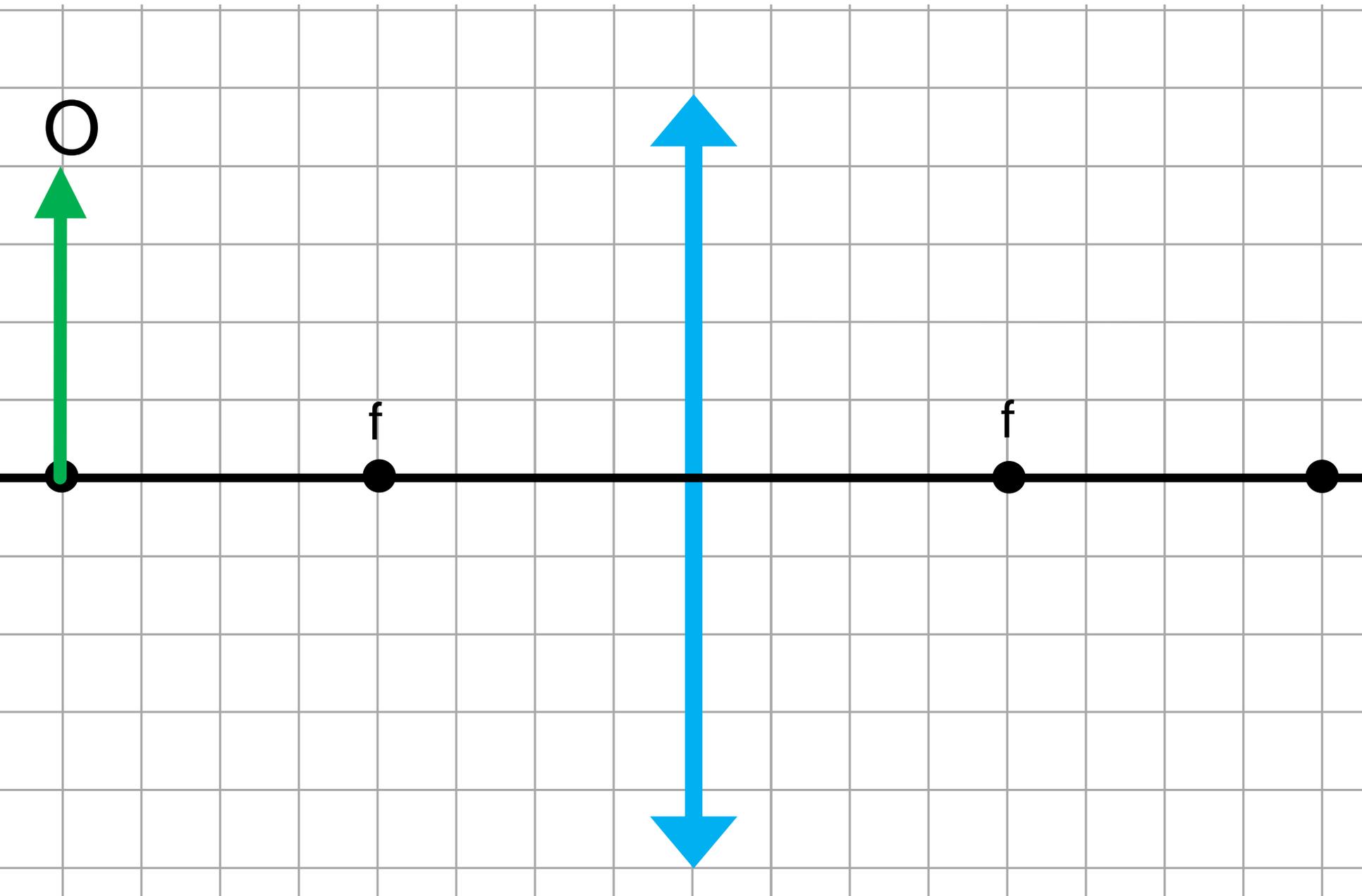


Figura 4: Objeto no anti-principal

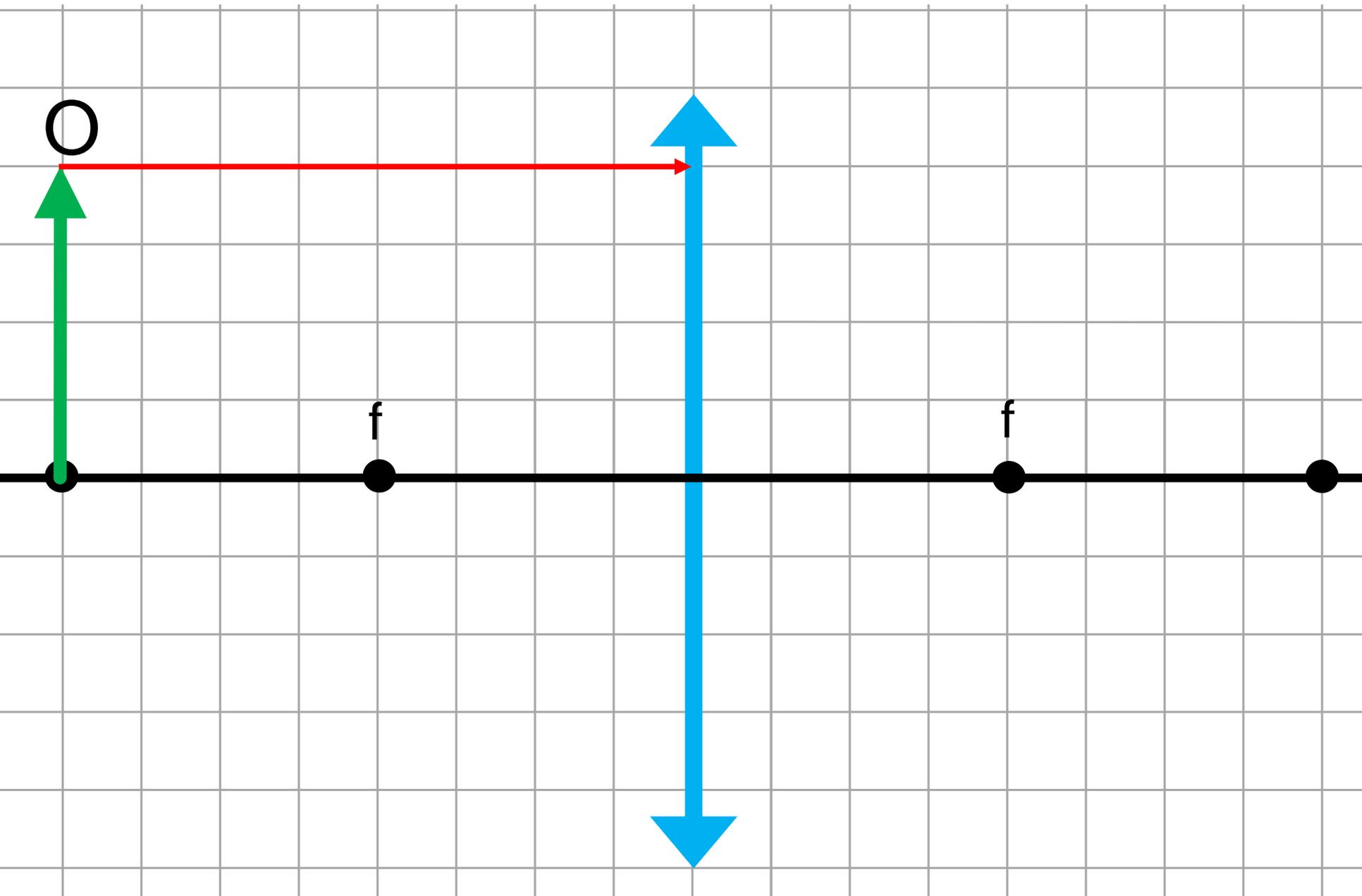


Figura 4: Objeto no anti-principal

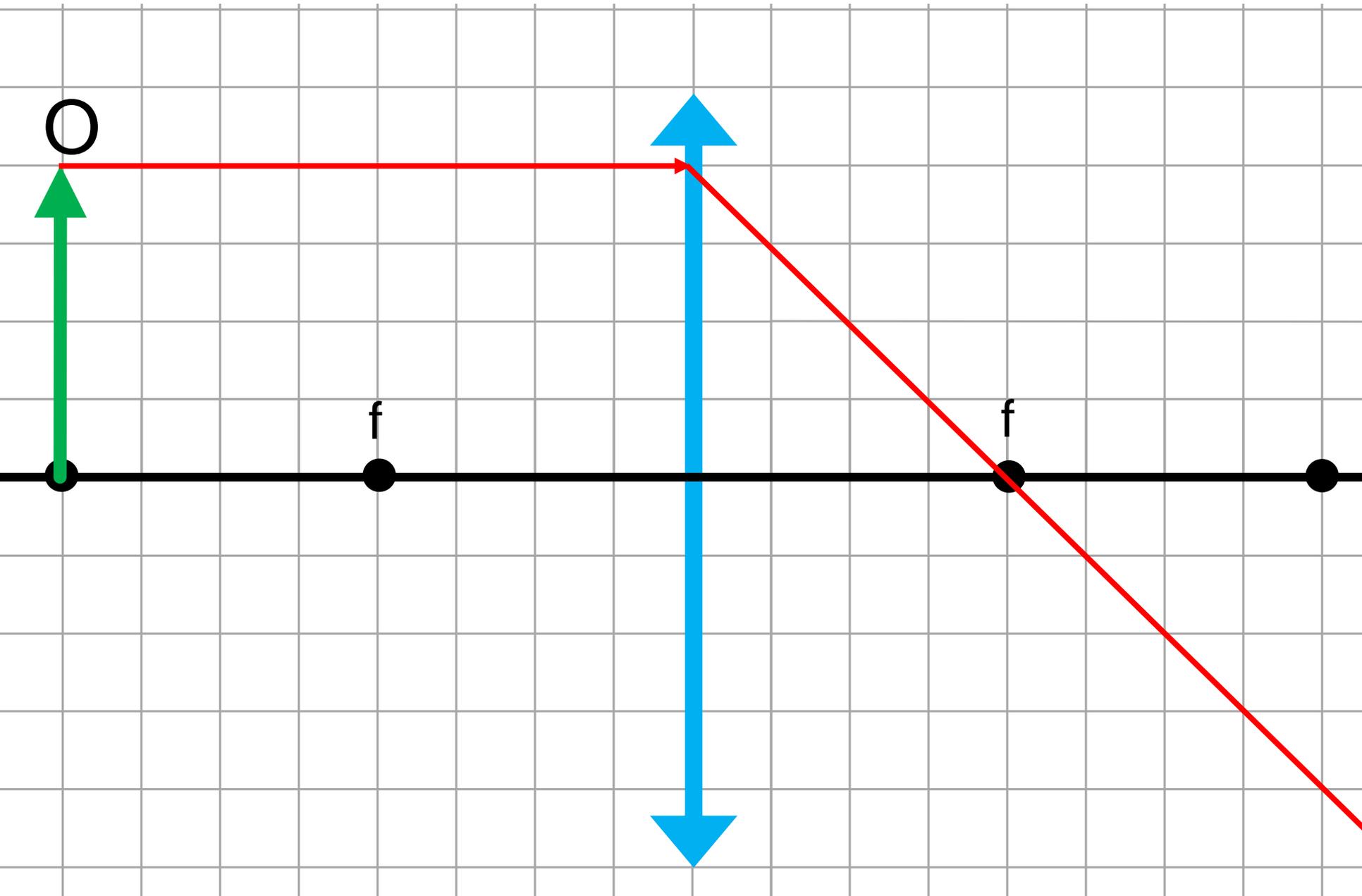


Figura 4: Objeto no anti-principal

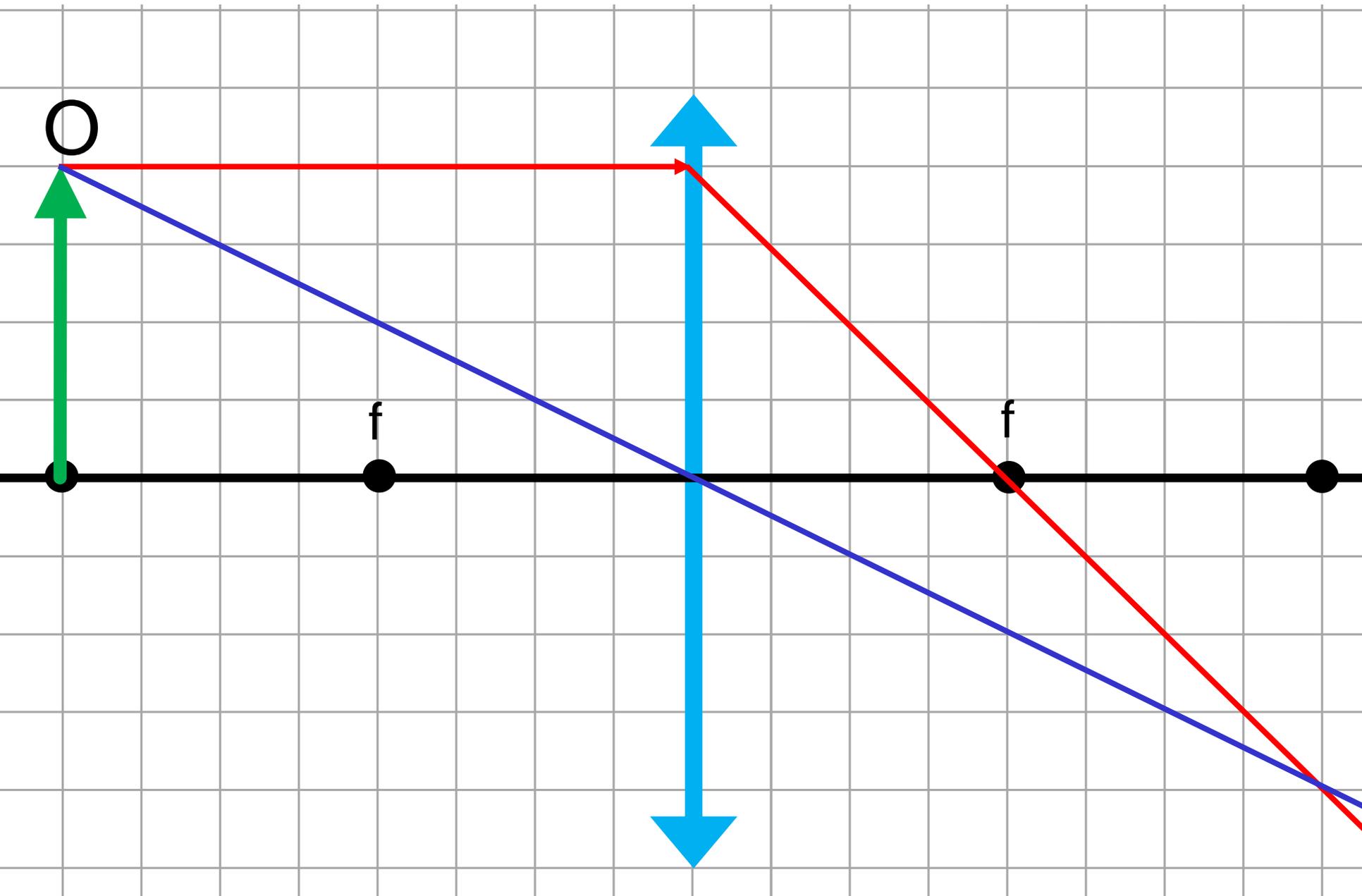


Figura 4: Objeto no anti-principal

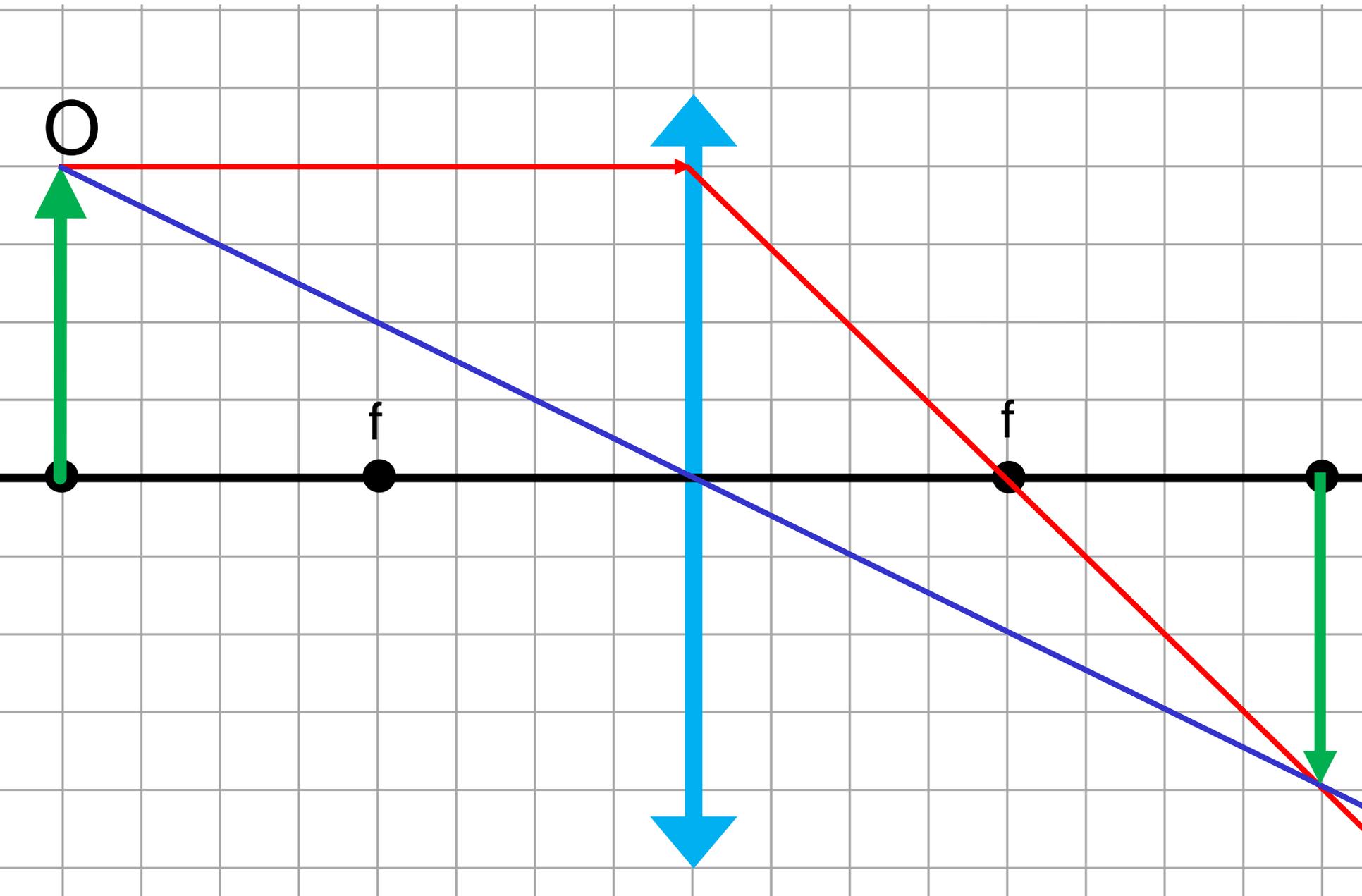


Figura 4: Objeto no anti-principal

CLASSIFICAÇÃO: Imagem REAL

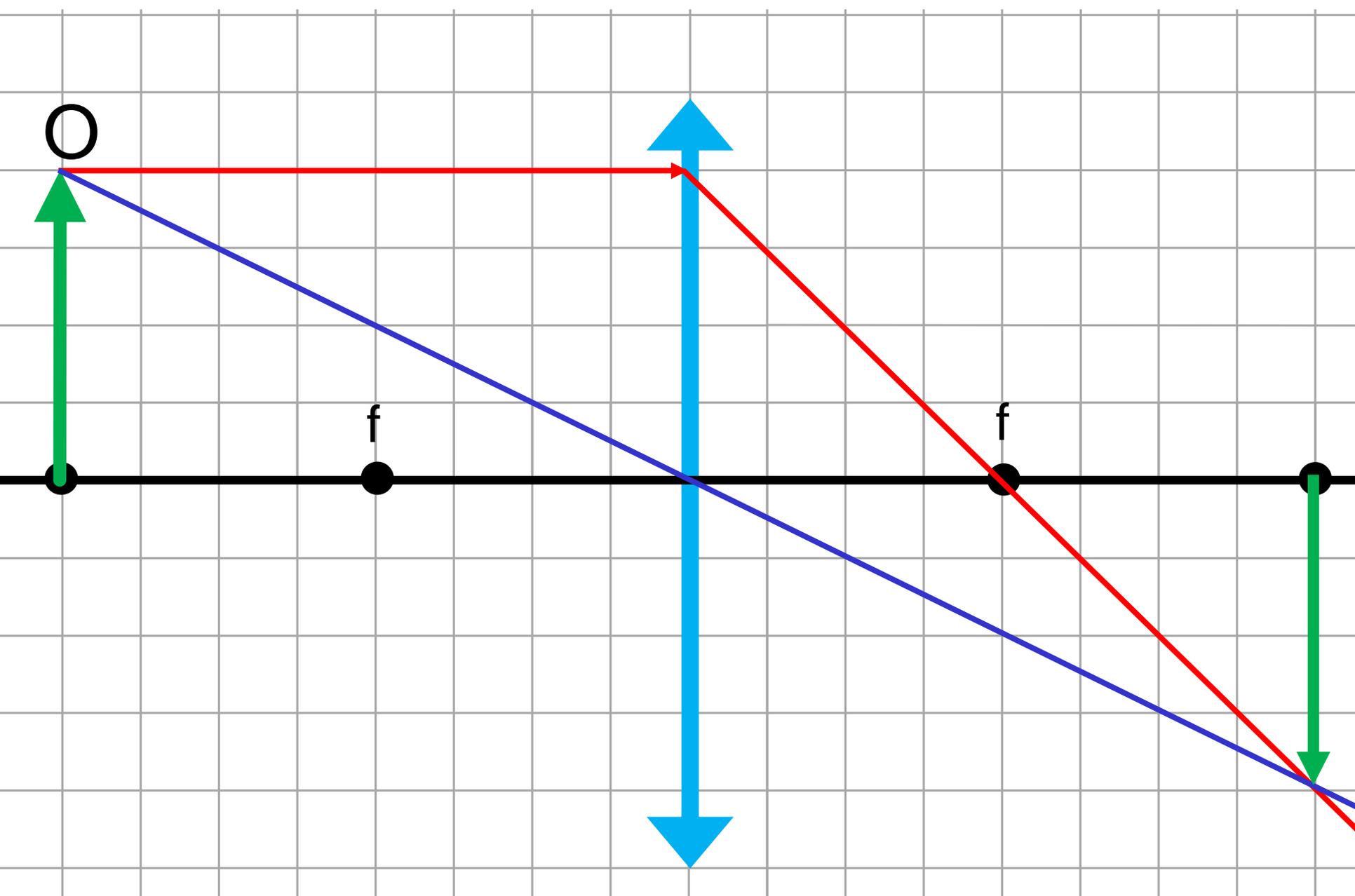


Figura 4: Objeto no anti-principal

CLASSIFICAÇÃO:

Imagem

REAL
INVERTIDA

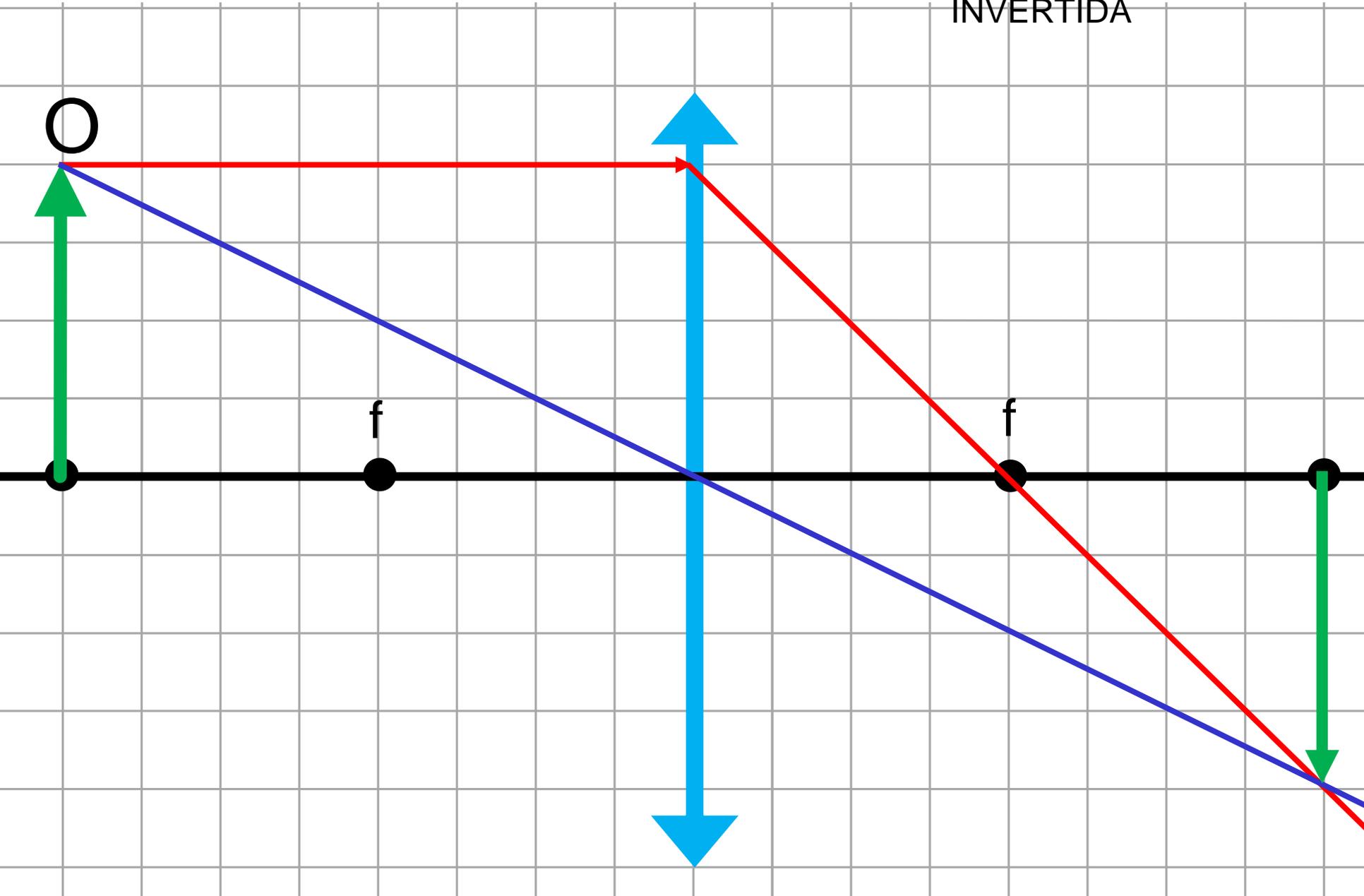


Figura 4: Objeto no anti-principal

CLASSIFICAÇÃO:

Imagem

REAL

INVERTIDA

IGUAL

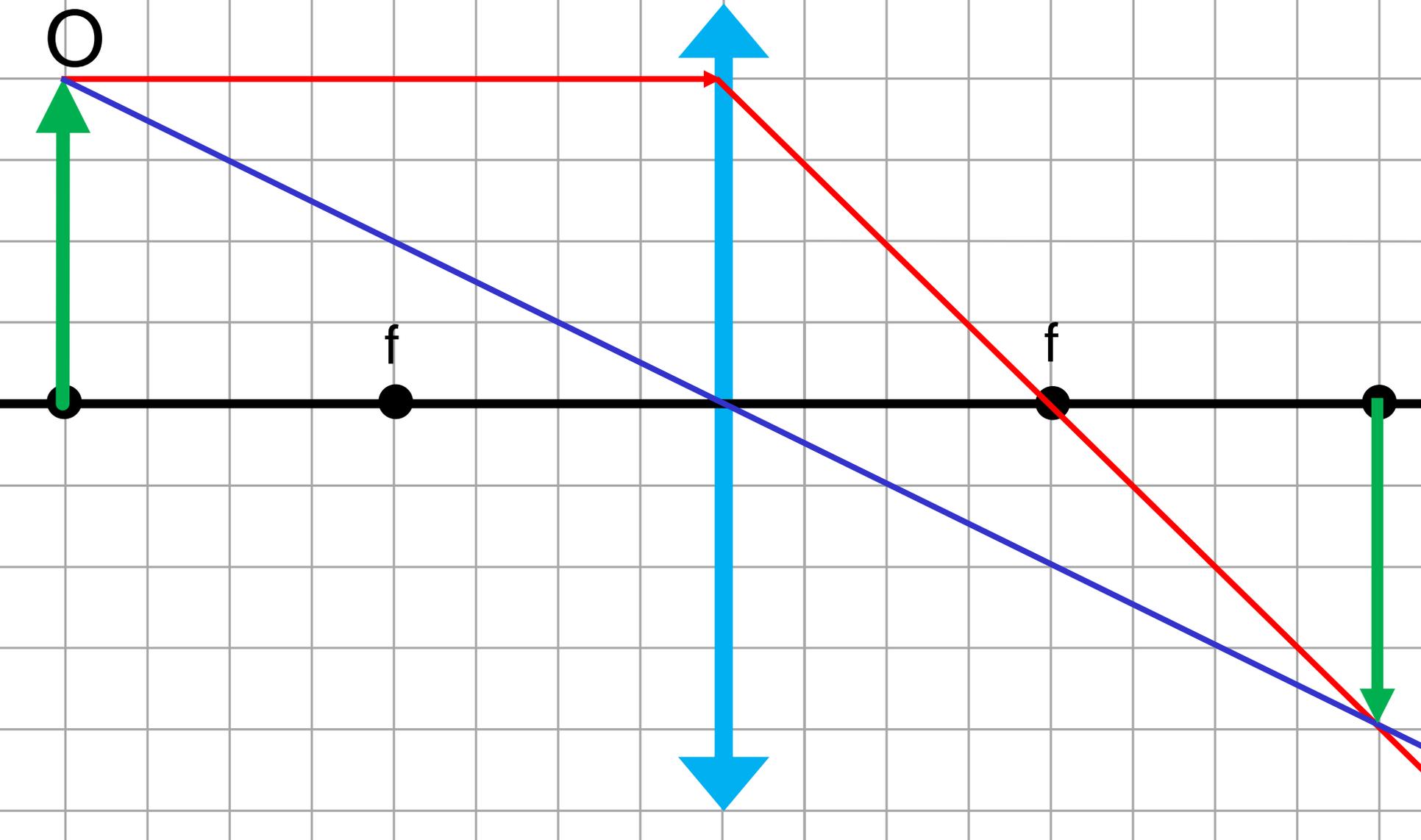
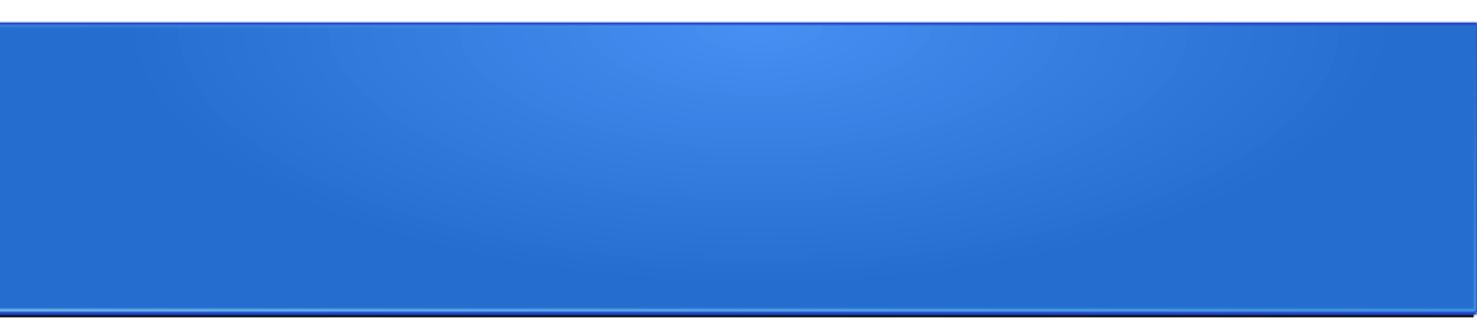


Figura 4: Objeto no anti-principal



Quinto caso

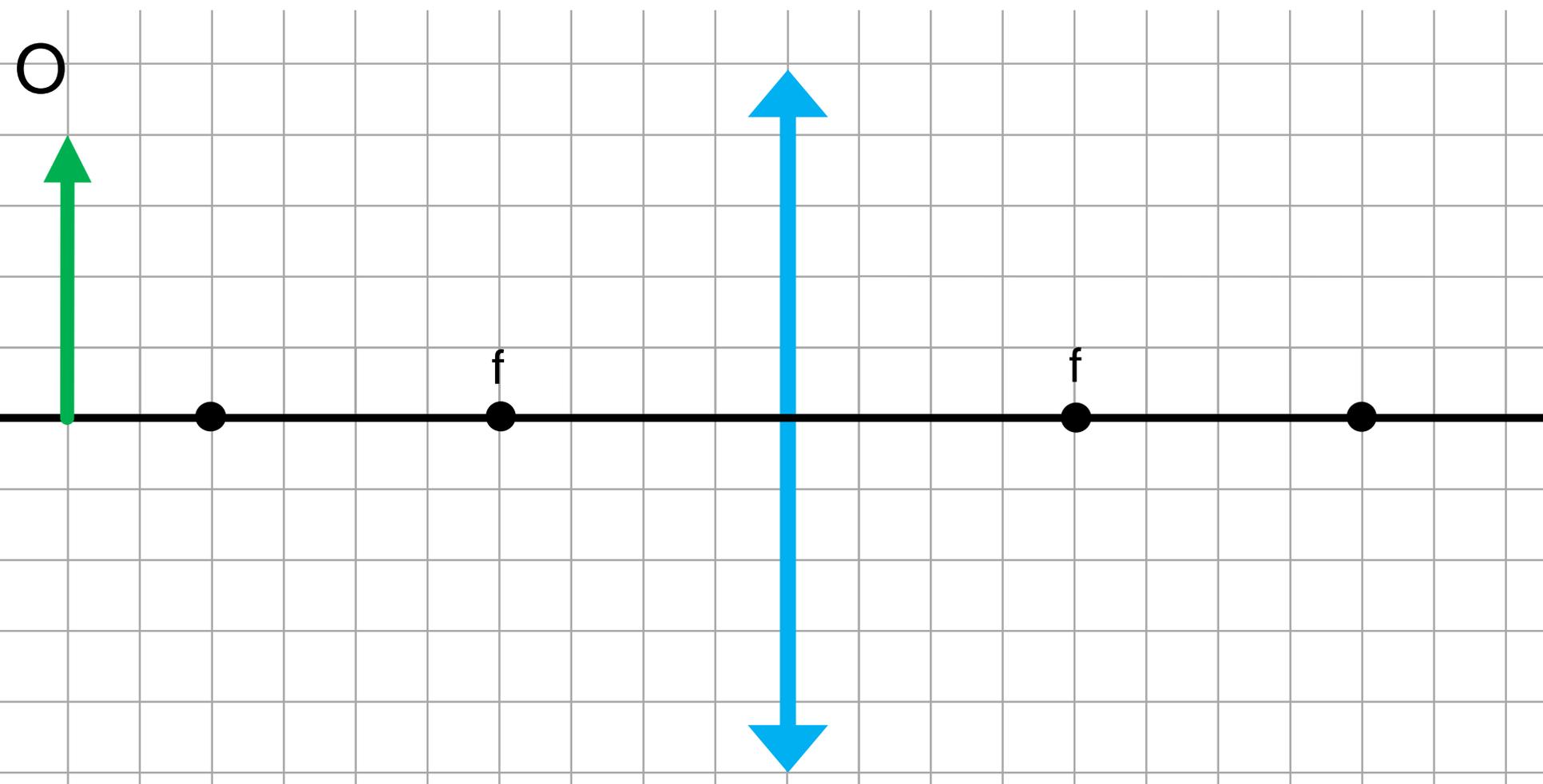


Figura 5: Objeto além do anti-principal

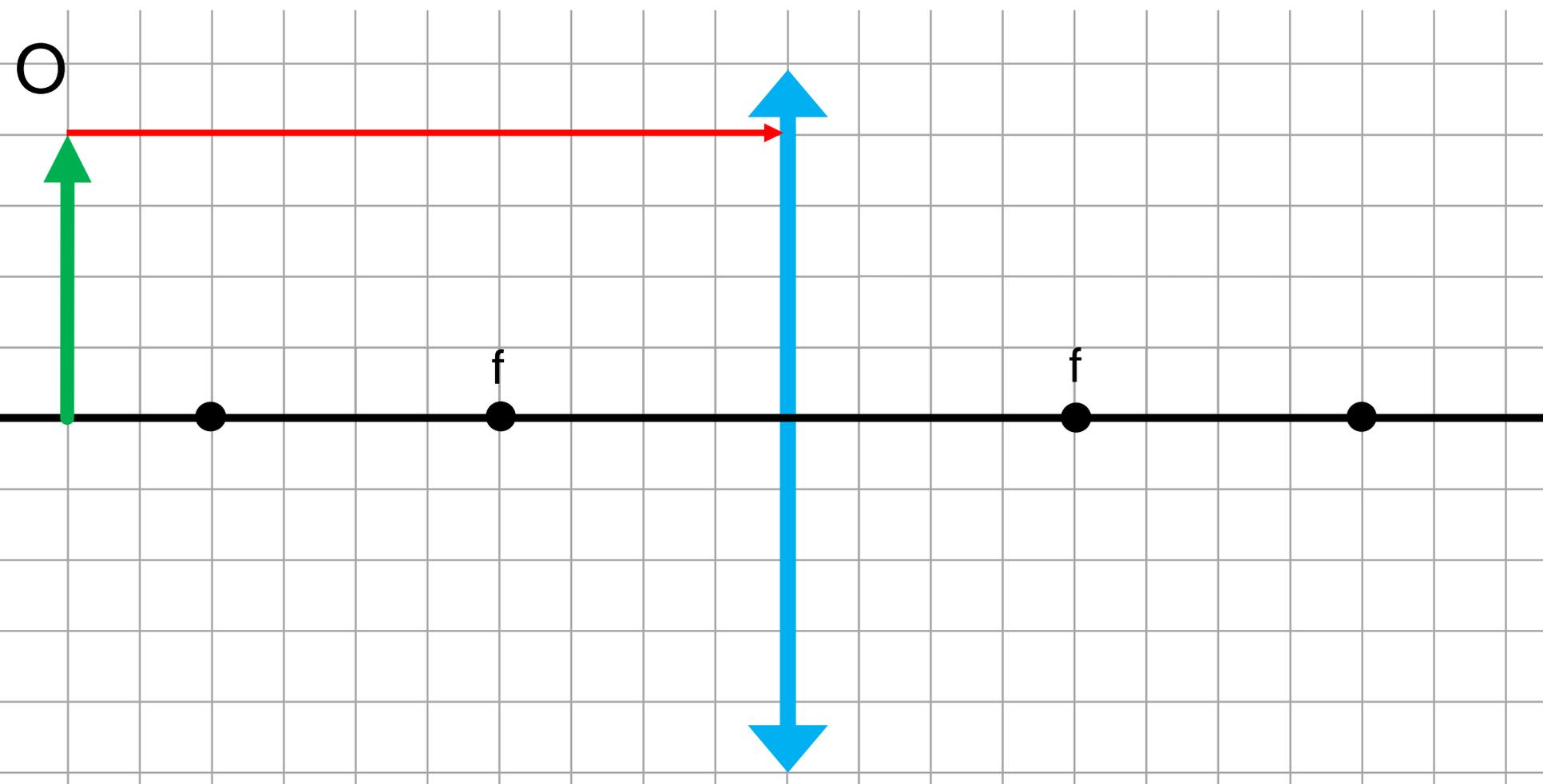


Figura 5: Objeto além do anti-principal

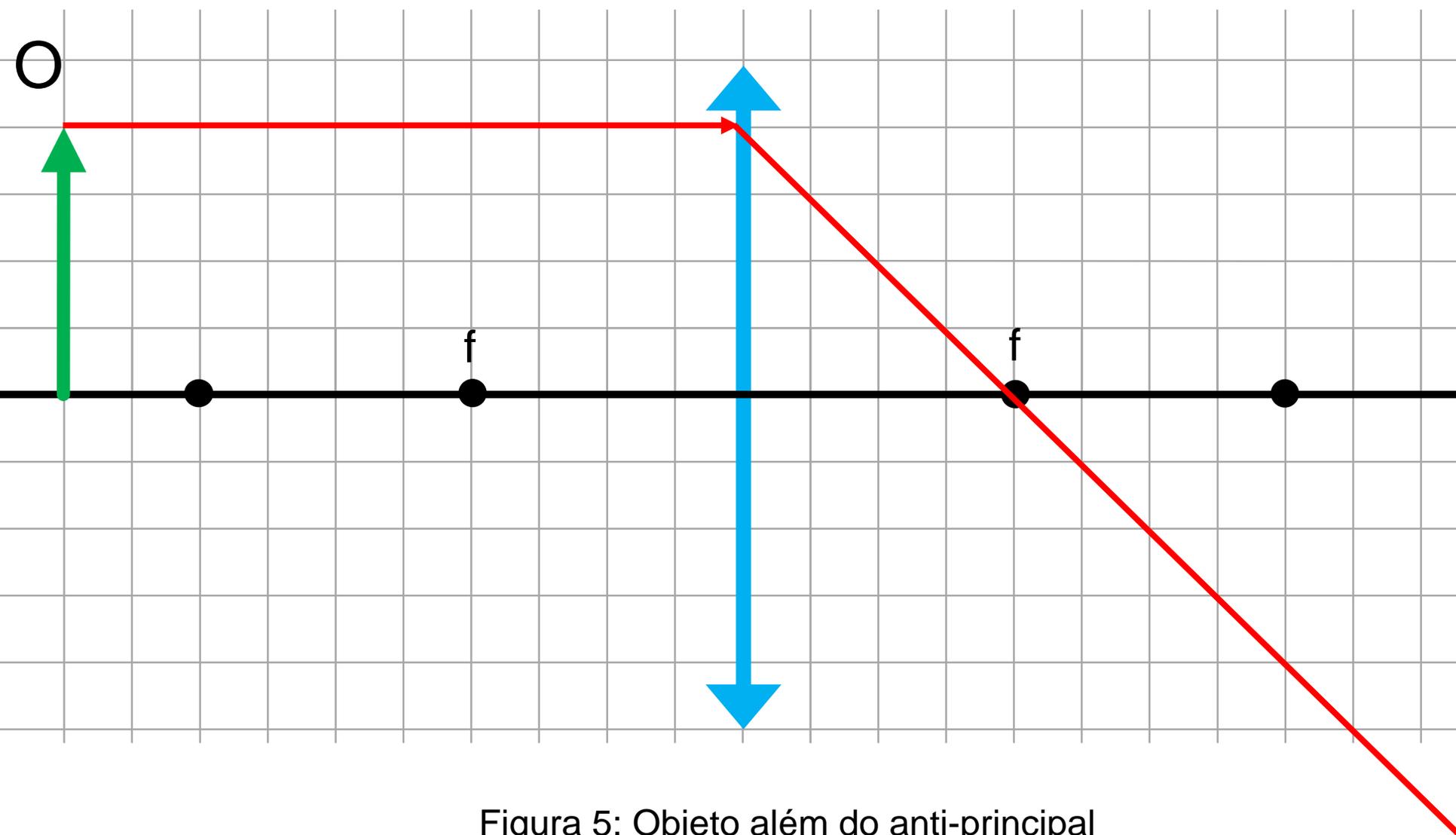


Figura 5: Objeto além do anti-principal

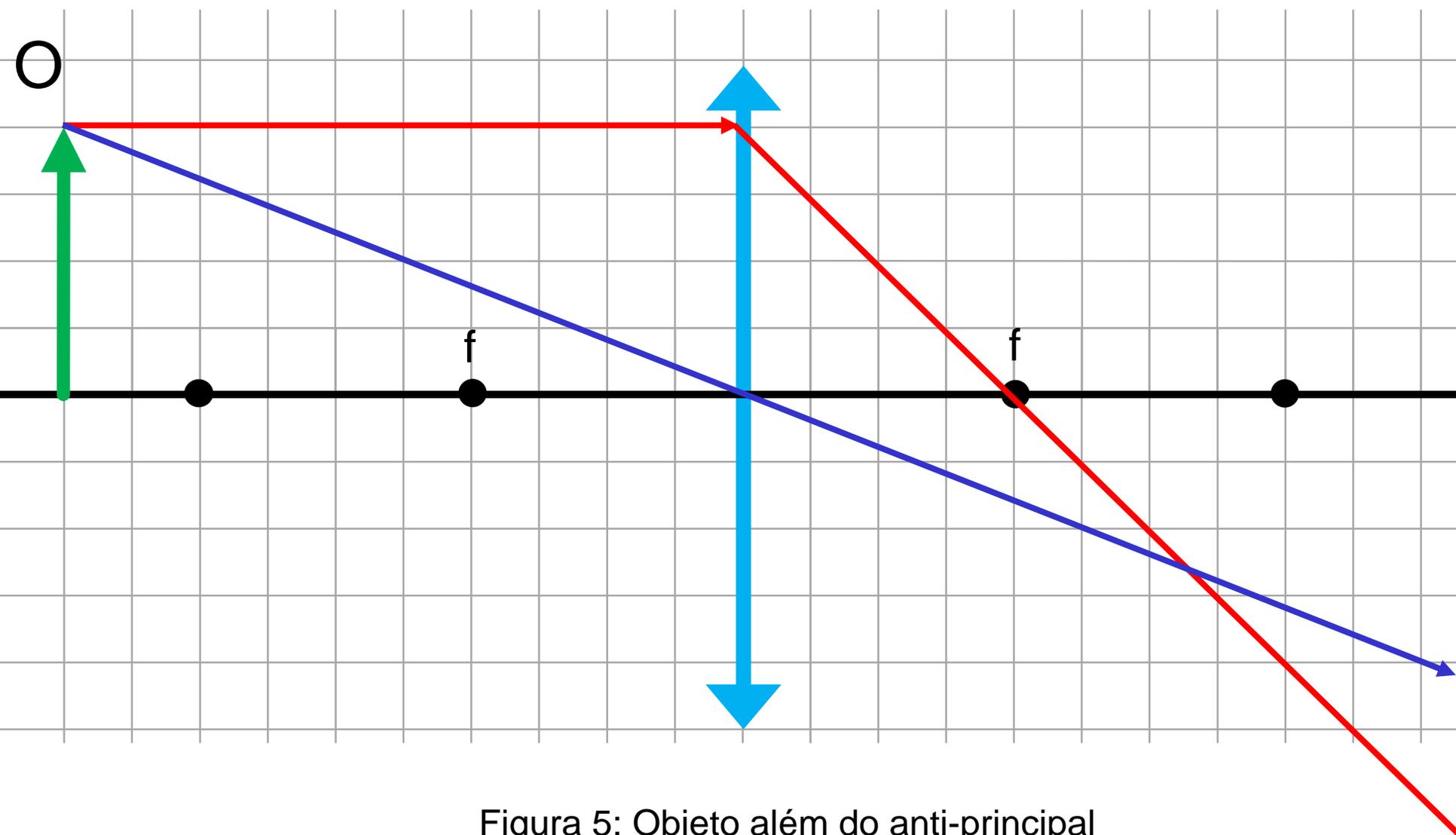


Figura 5: Objeto além do anti-principal

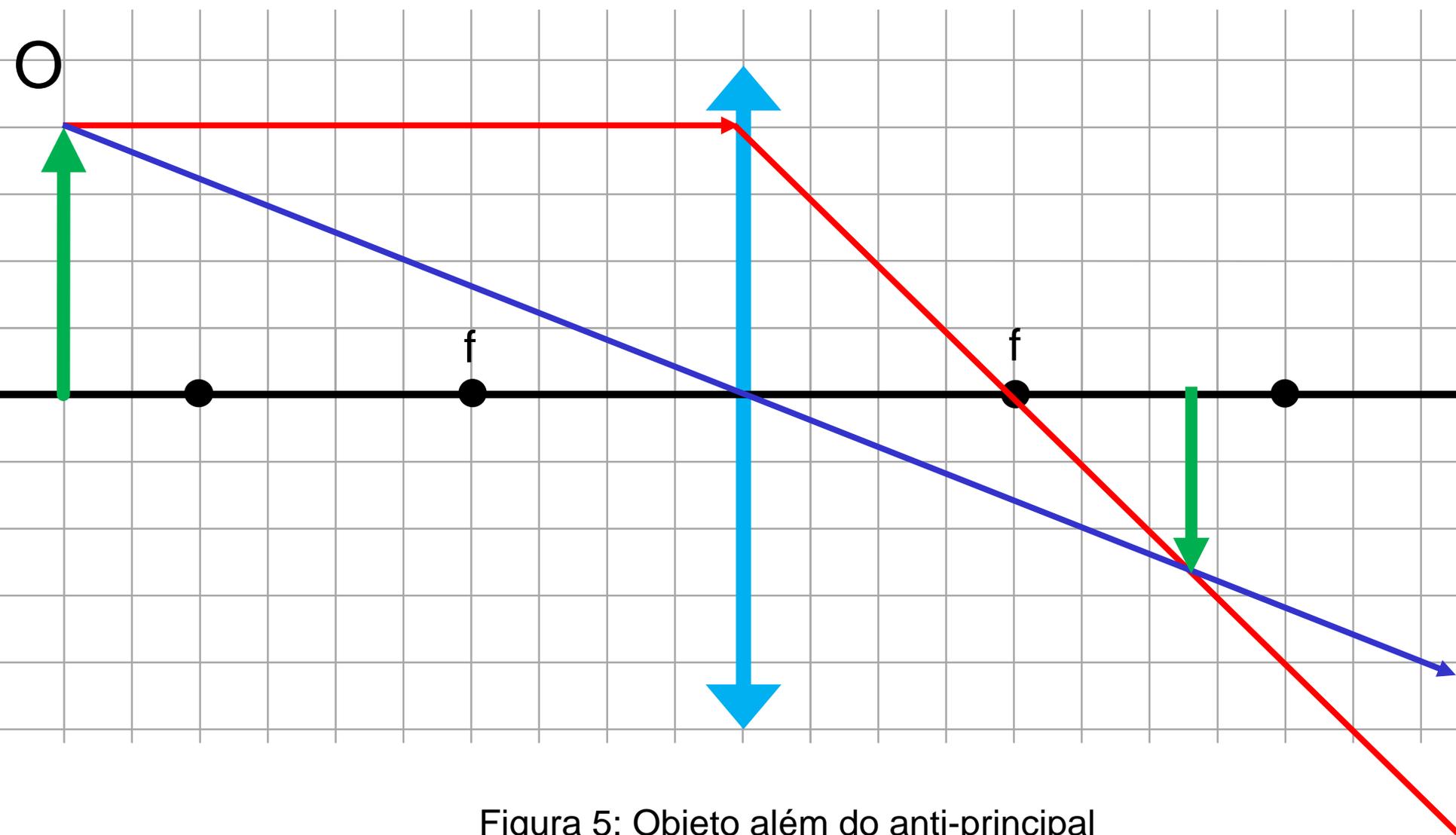


Figura 5: Objeto além do anti-principal

CLASSIFICAÇÃO: Imagem REAL

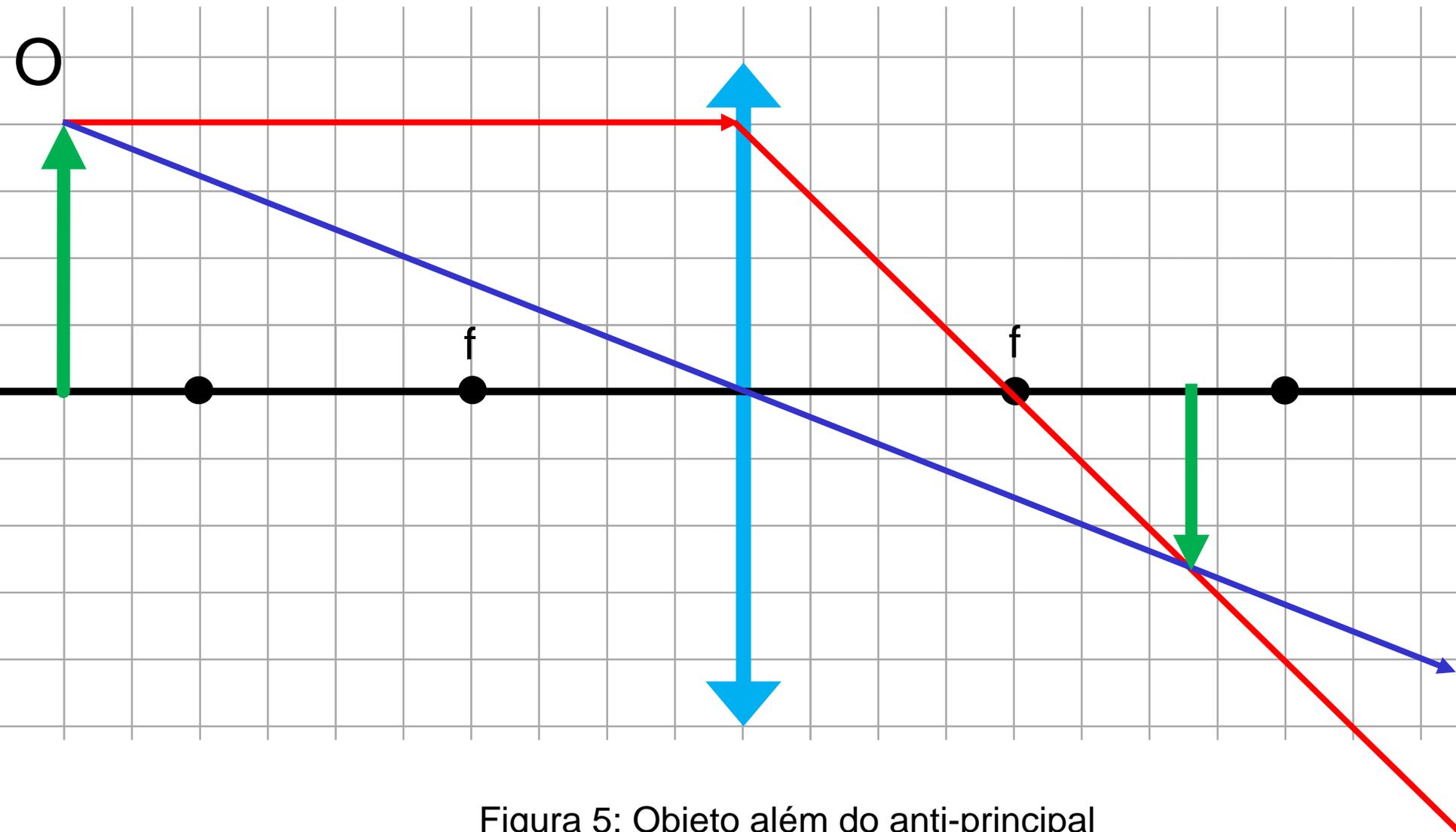


Figura 5: Objeto além do anti-principal

CLASSIFICAÇÃO: Imagem REAL
INVERTIDA

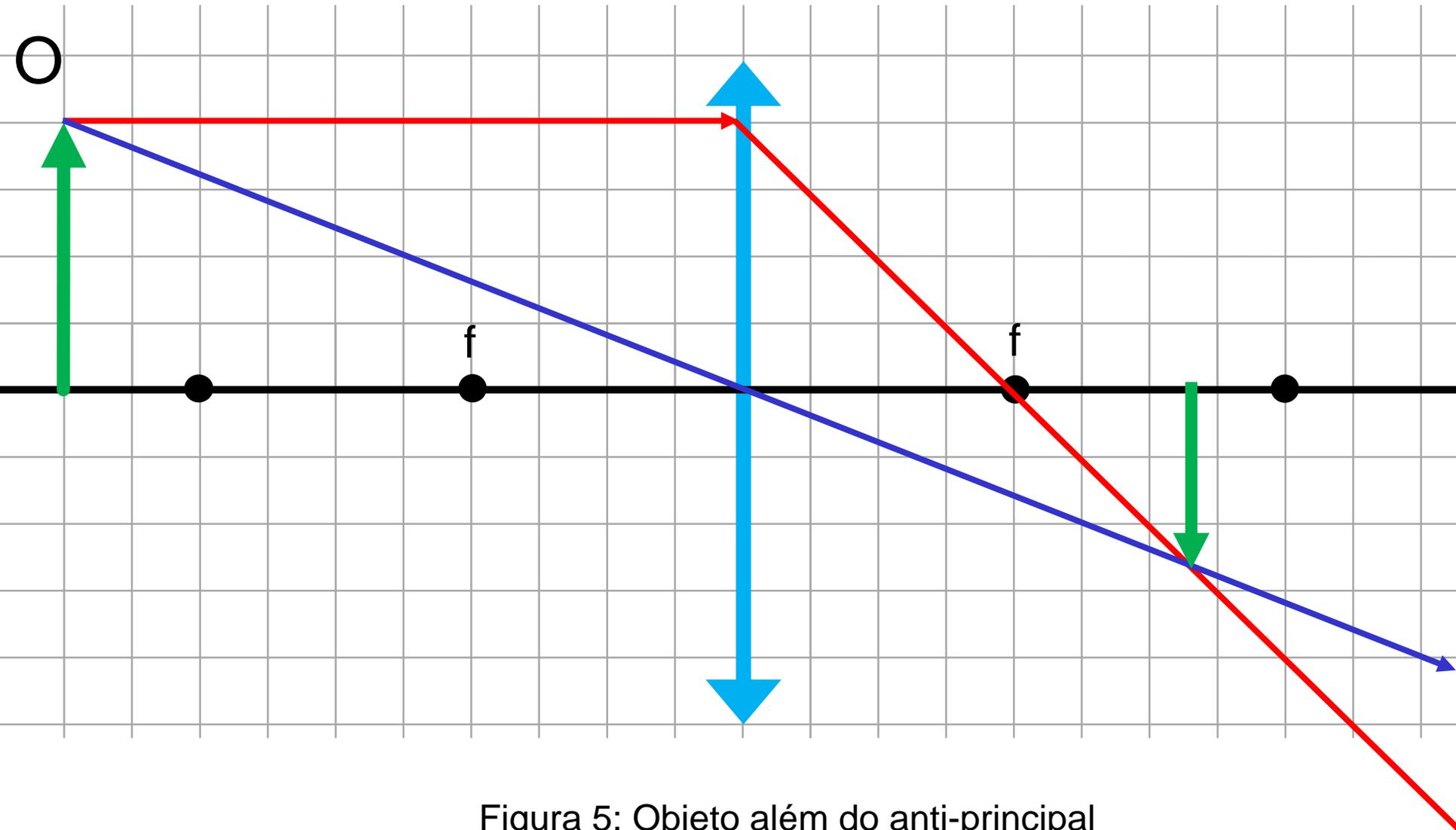


Figura 5: Objeto além do anti-principal

CLASSIFICAÇÃO:

Imagem

REAL
INVERTIDA
MENOR

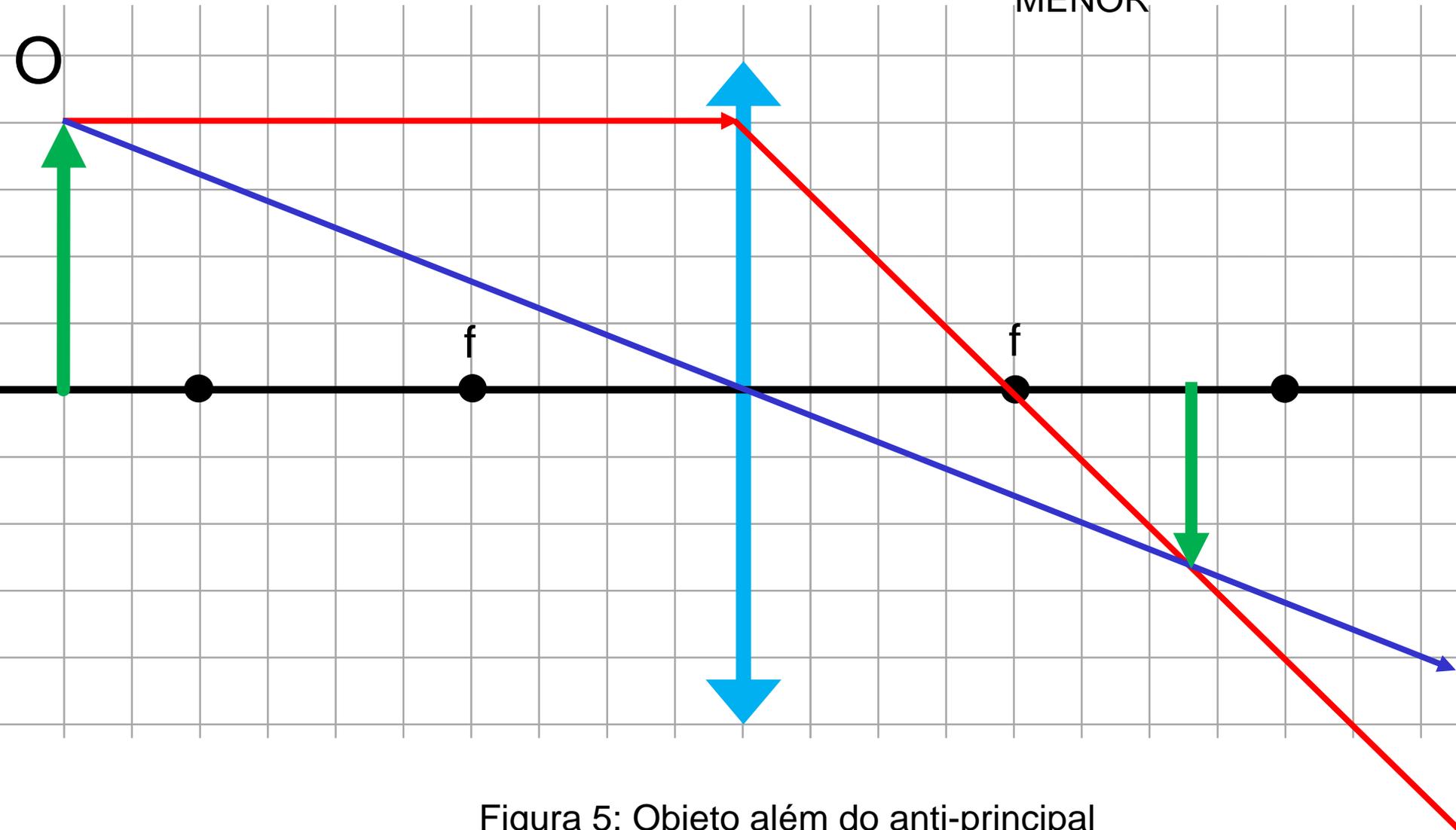
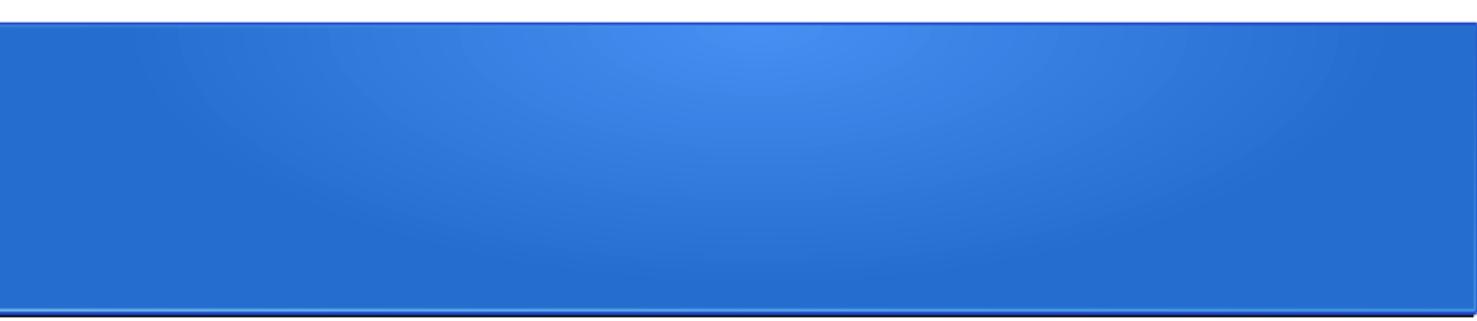


Figura 5: Objeto além do anti-principal



Sexto Caso

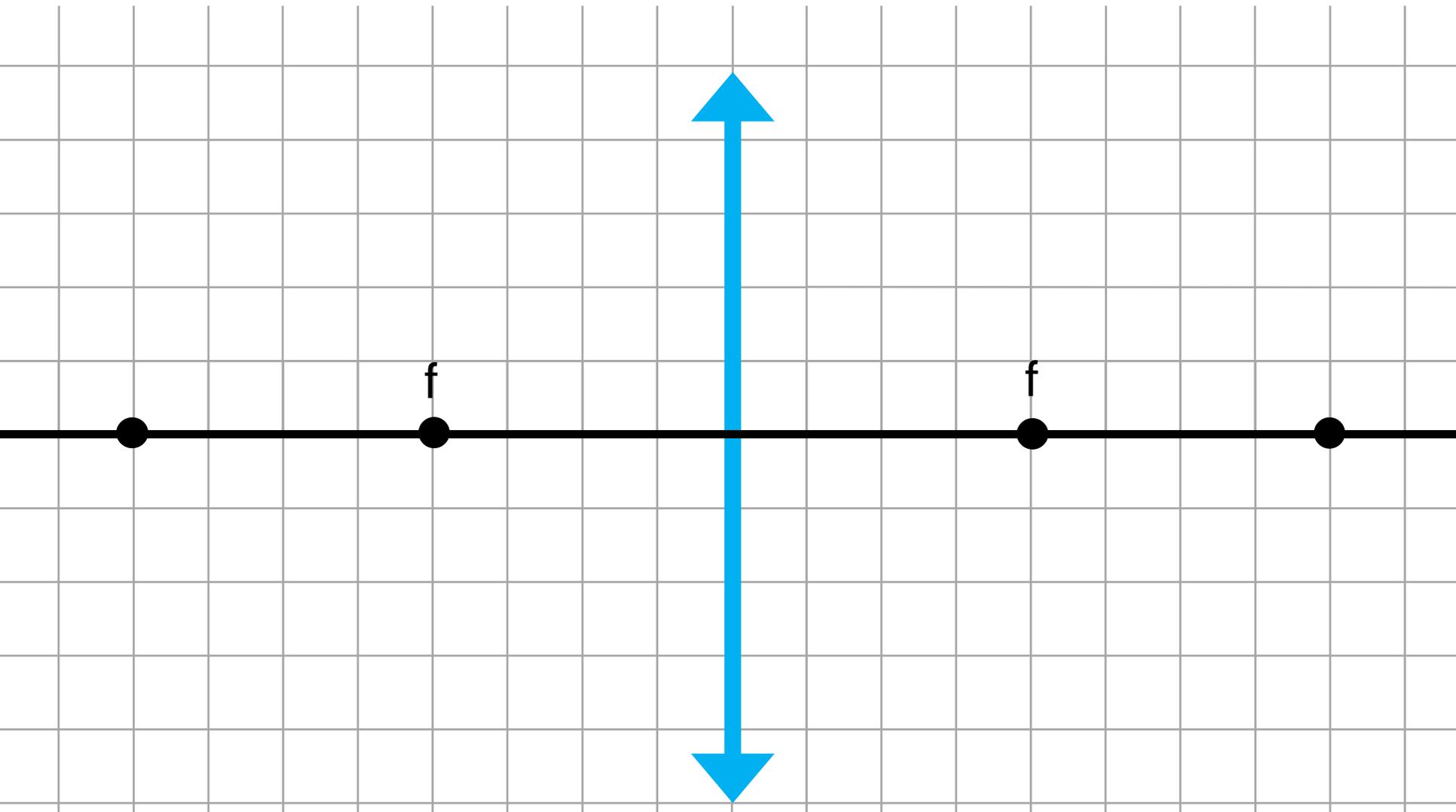


Figura 6: Objeto no “infinito”

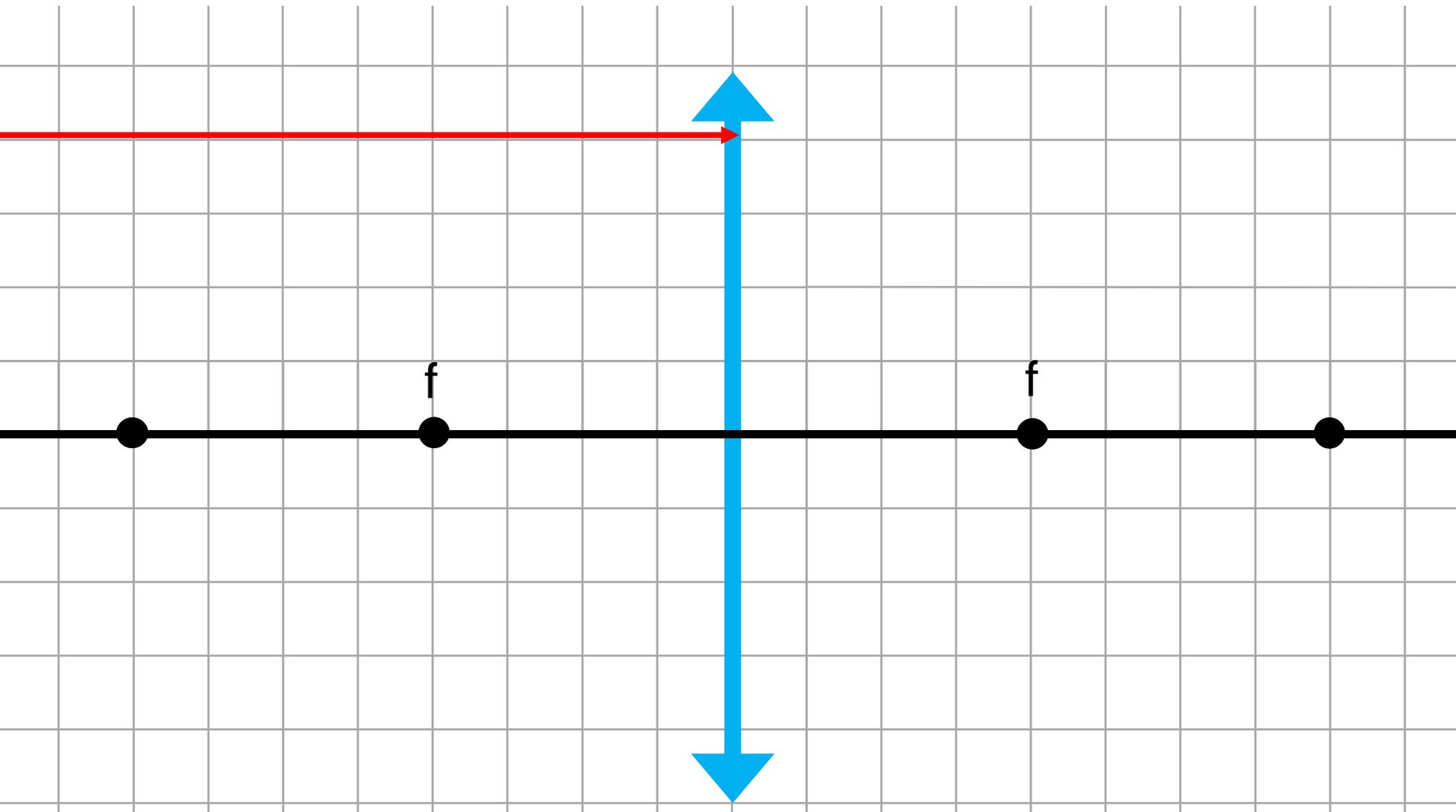


Figura 6: Objeto no “infinito”

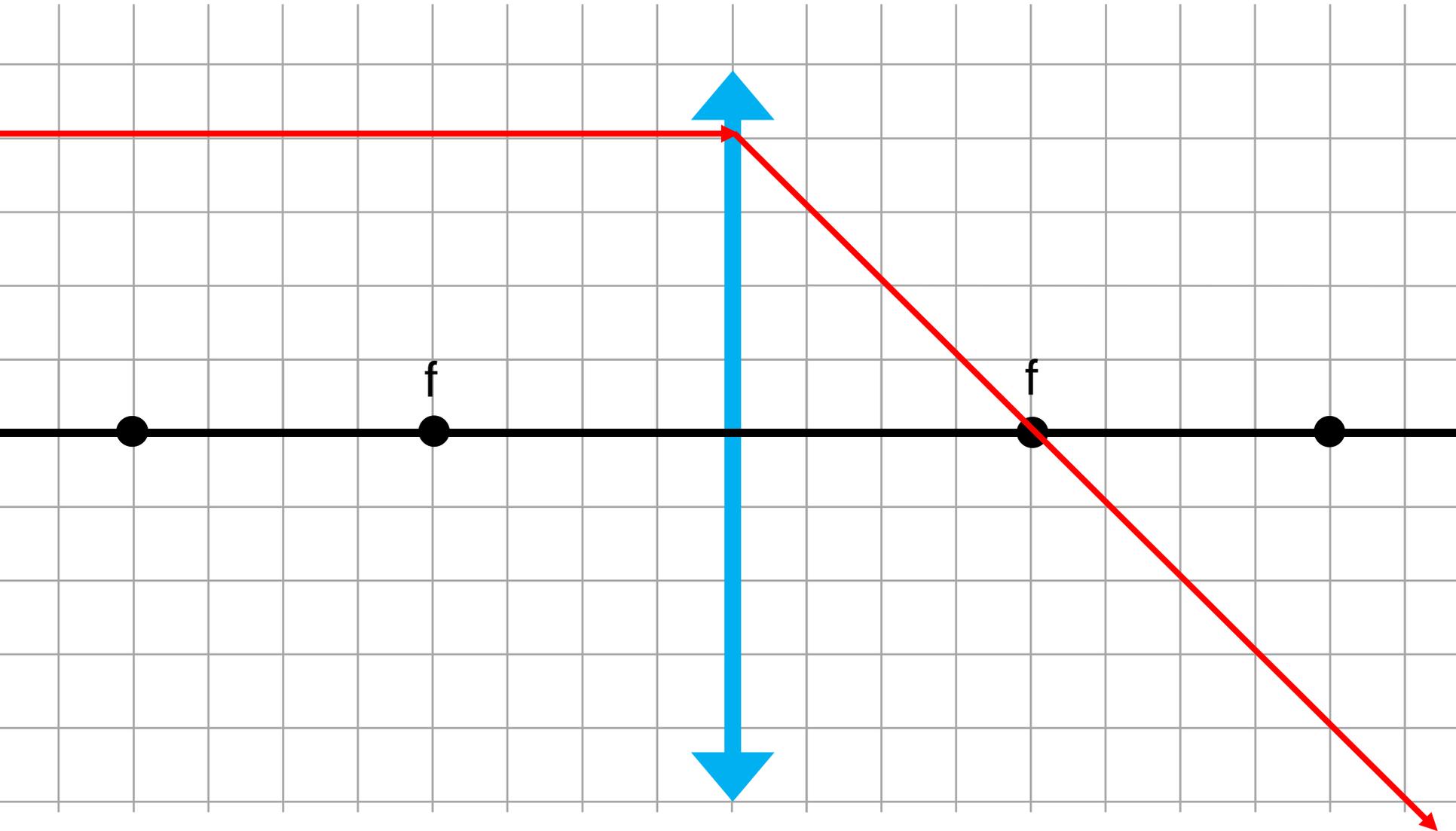


Figura 6: Objeto no “infinito”

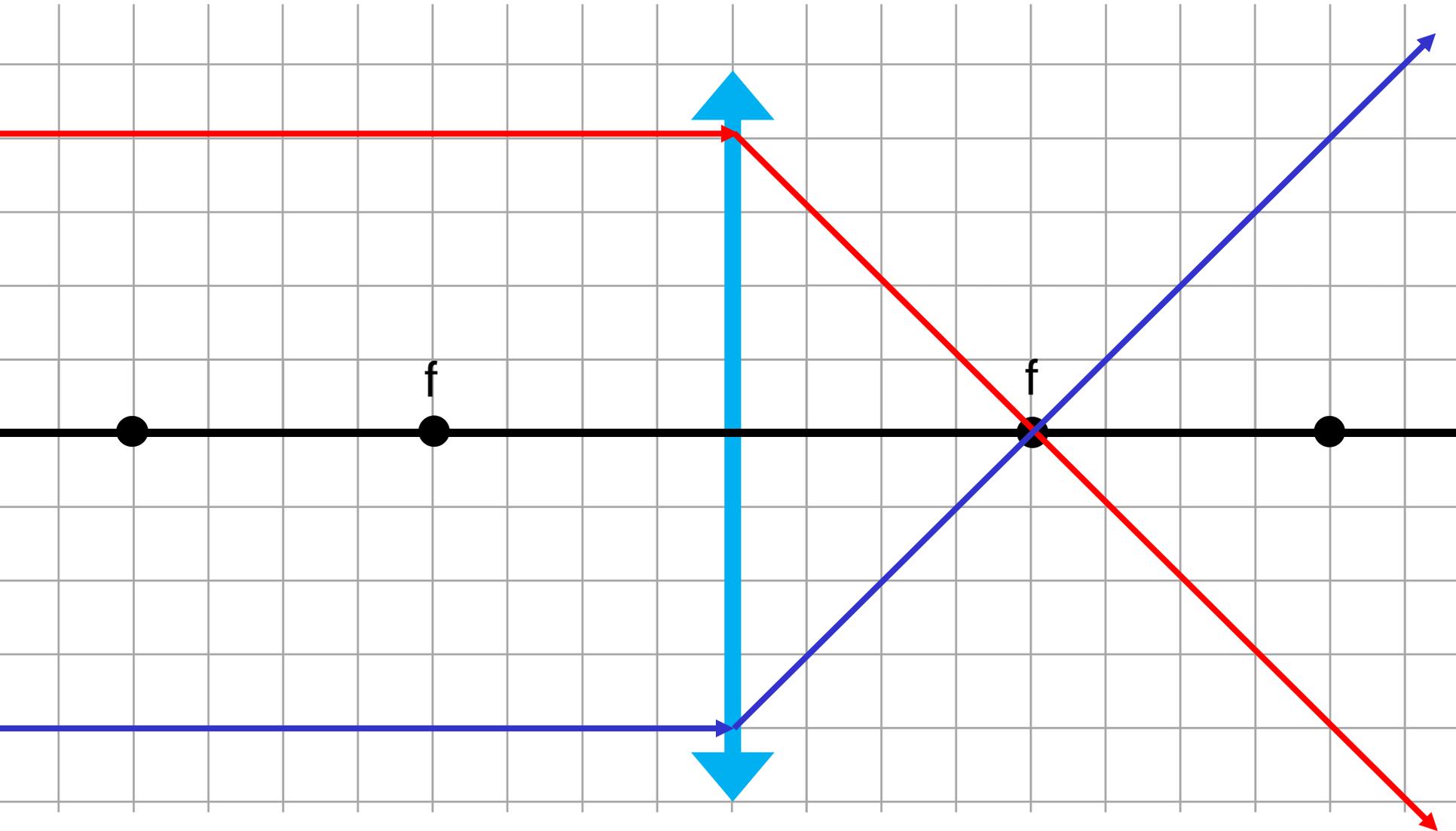


Figura 6: Objeto no “infinito”

CLASSIFICAÇÃO: Imagem

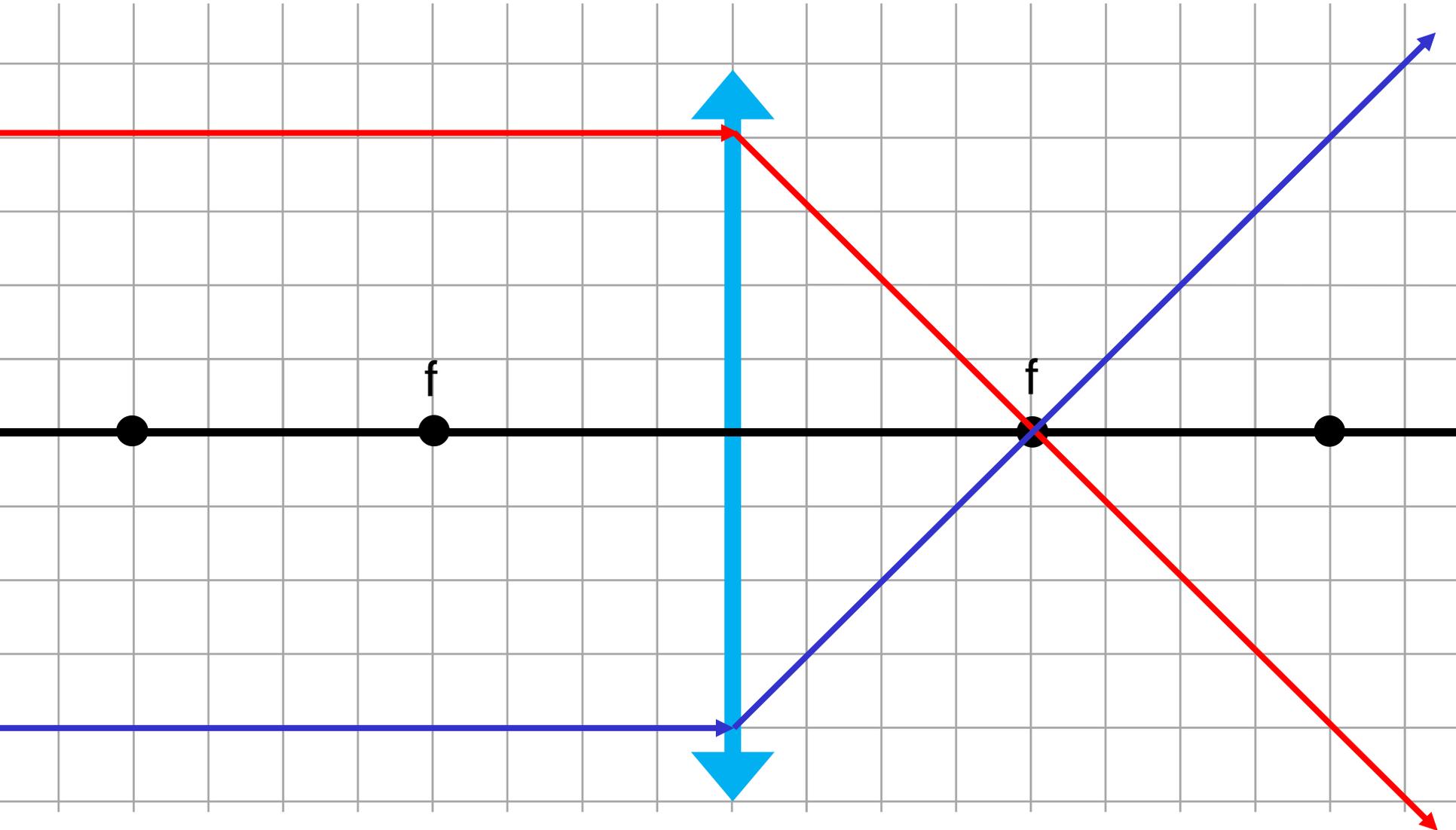


Figura 6: Objeto no “infinito”

CLASSIFICAÇÃO:

Imagem PONTUAL, REAL
E LOCALIZADA NO FOCO
IMAGEM

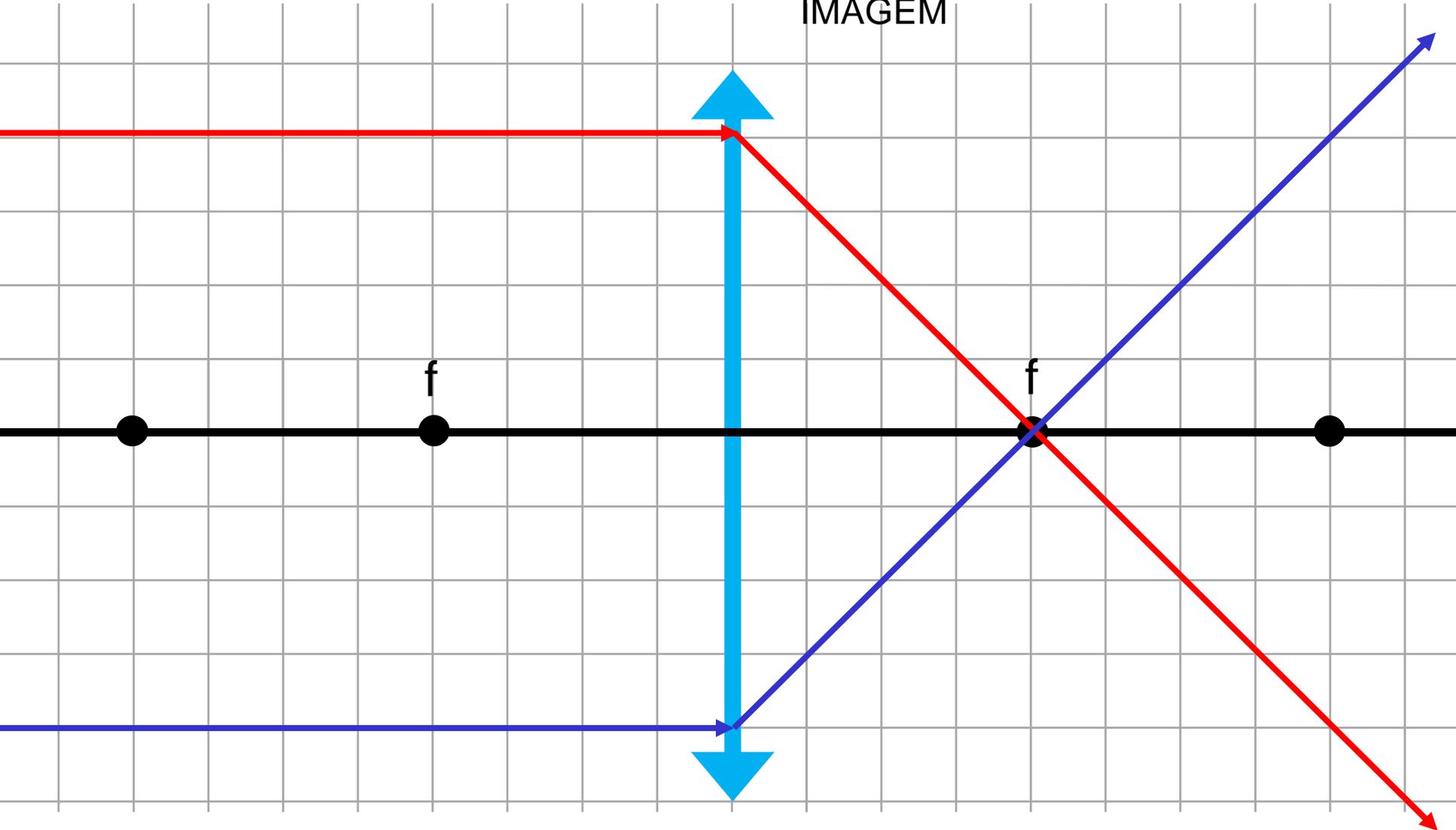
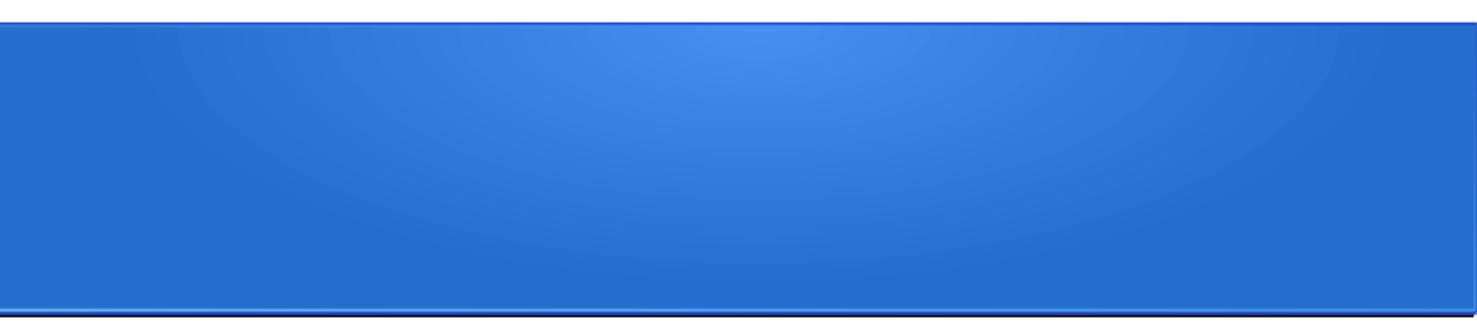
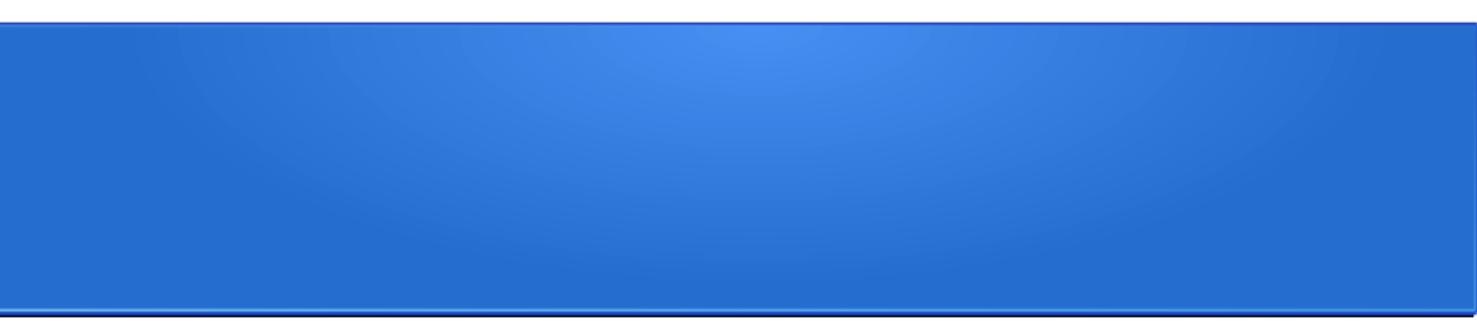


Figura 6: Objeto no “infinito”



LENTES DIVERGENTES



Primeiro caso

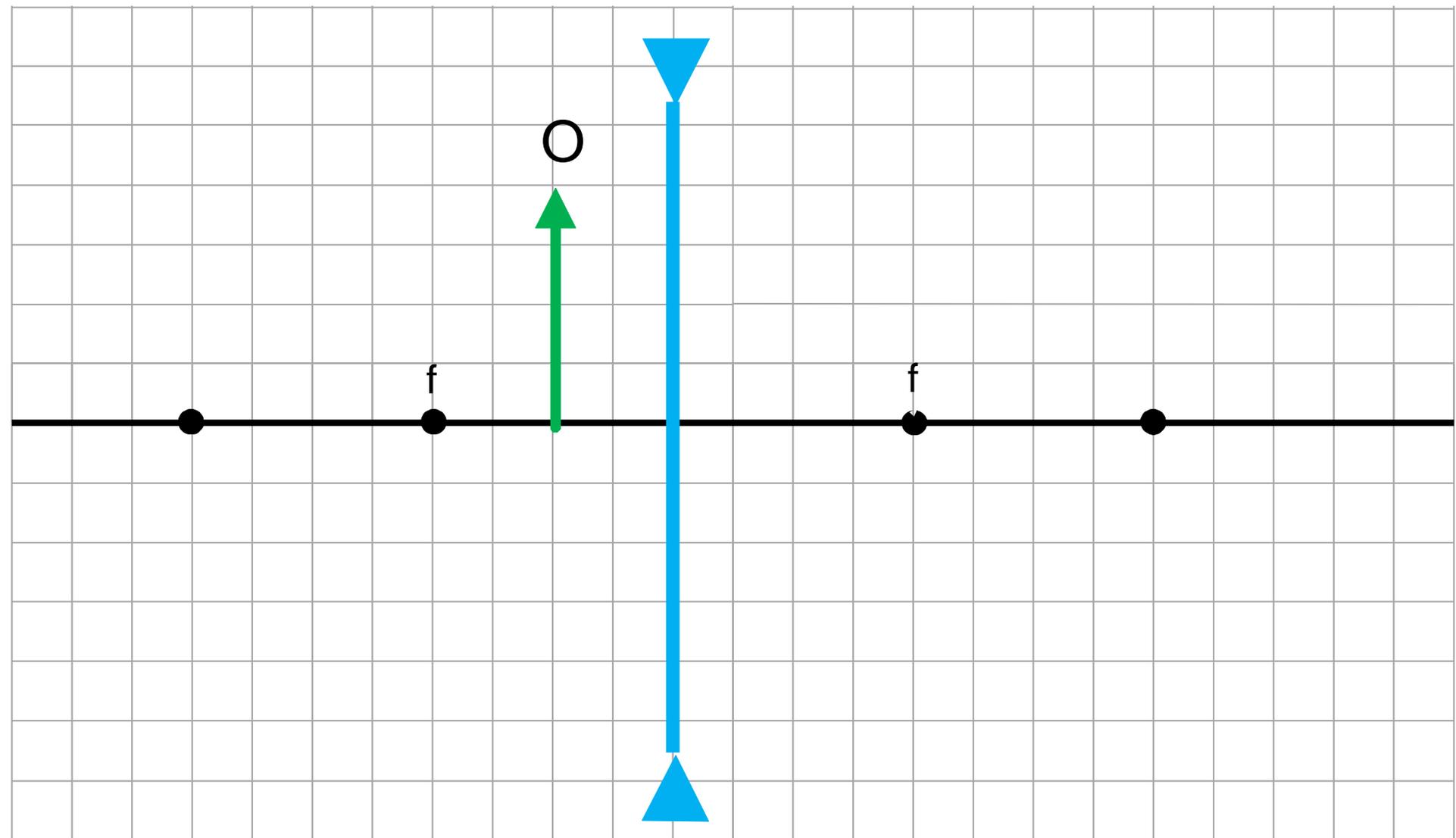


Figura 7: Objeto entre o vértice e o foco

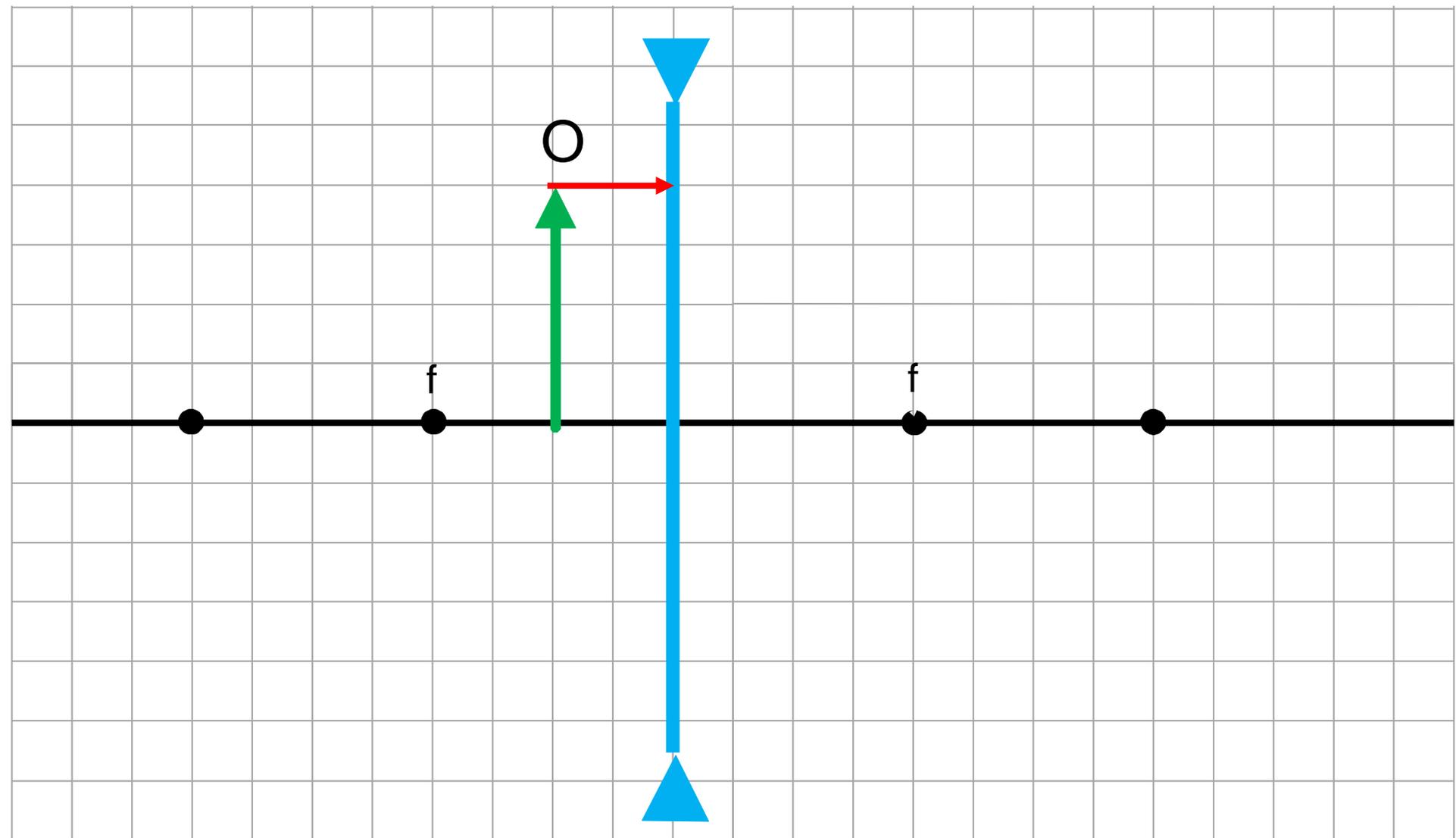


Figura 7: Objeto entre o vértice e o foco

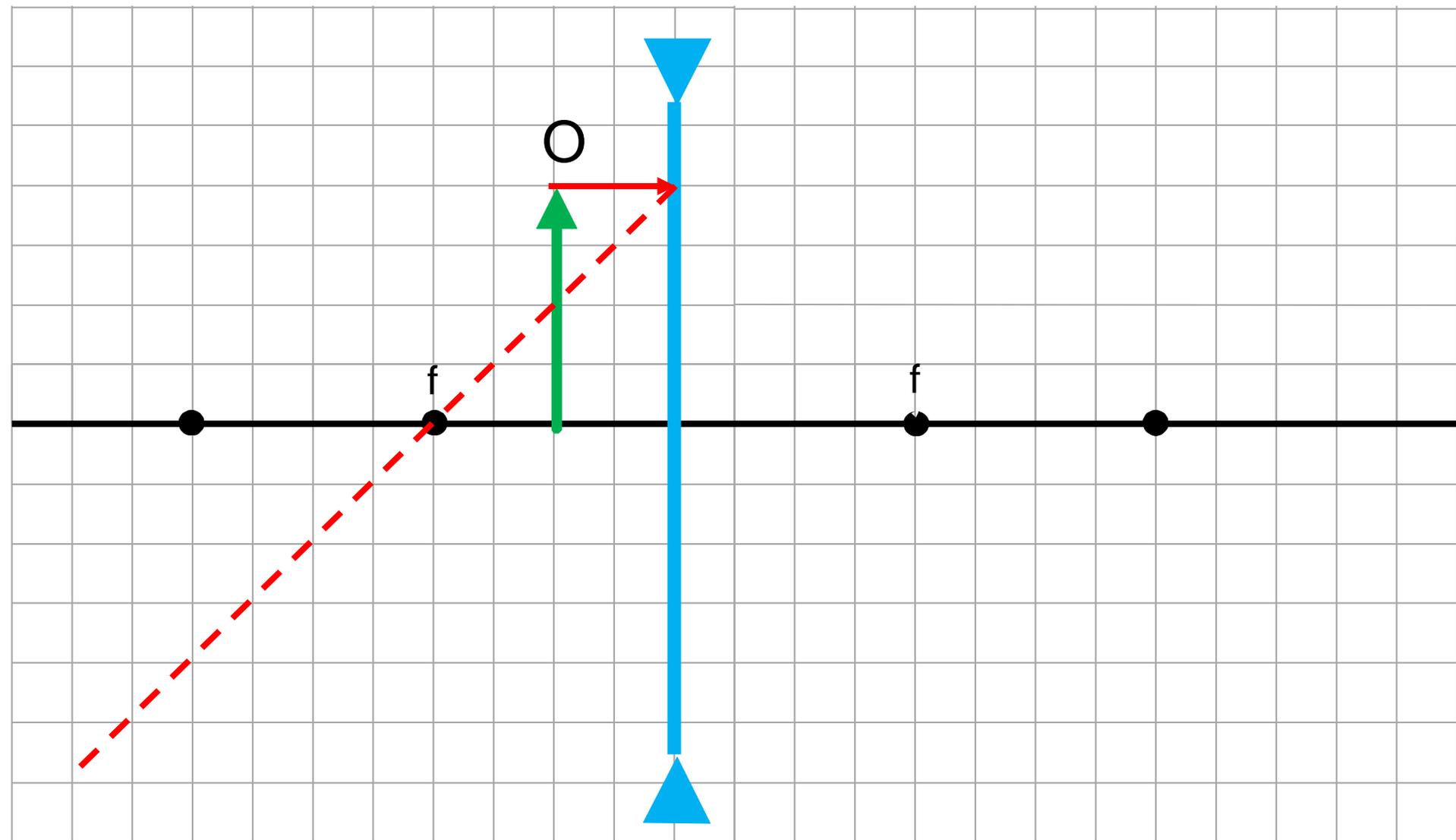


Figura 7: Objeto entre o vértice e o foco

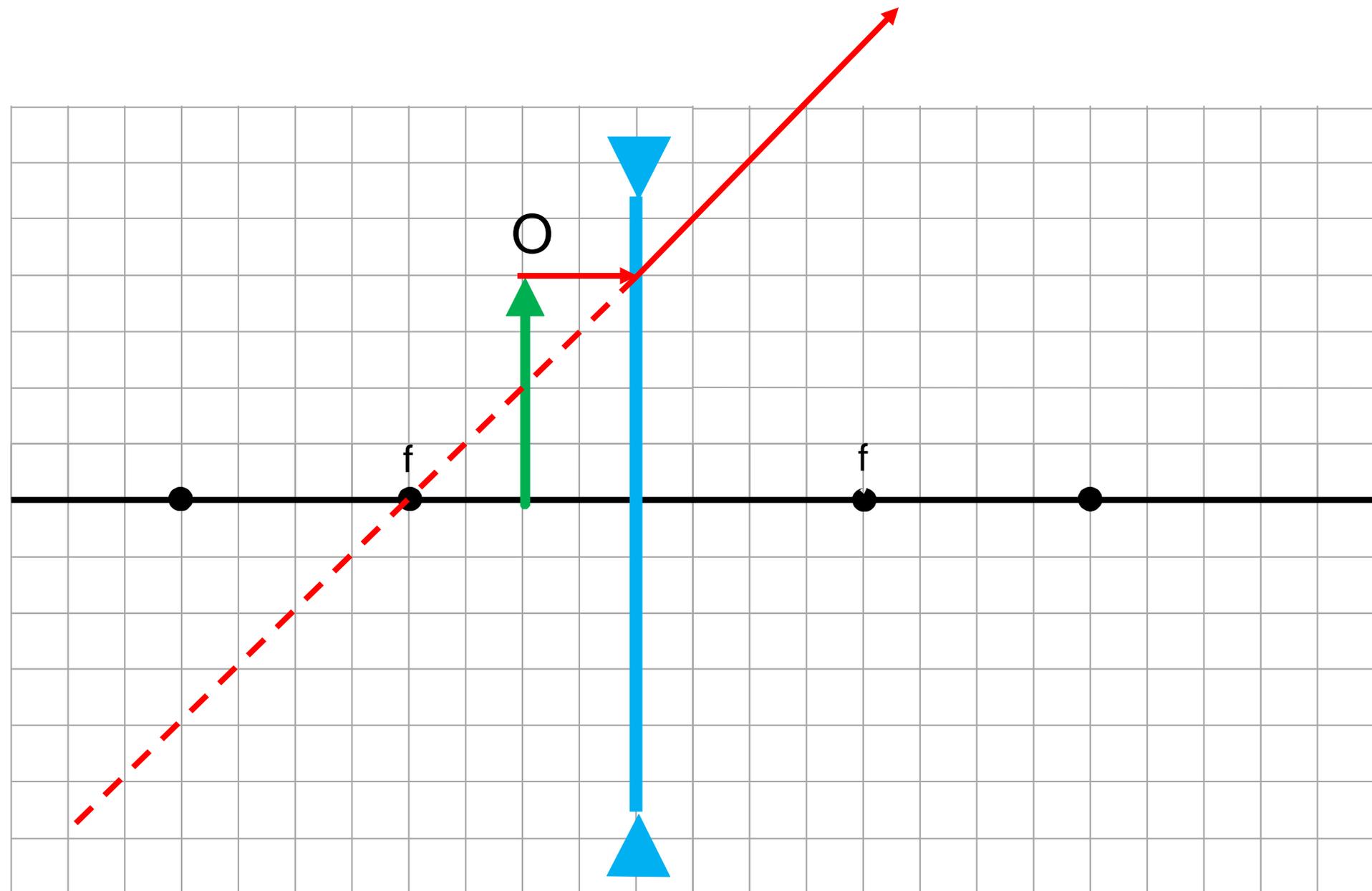


Figura 7: Objeto entre o vértice e o foco

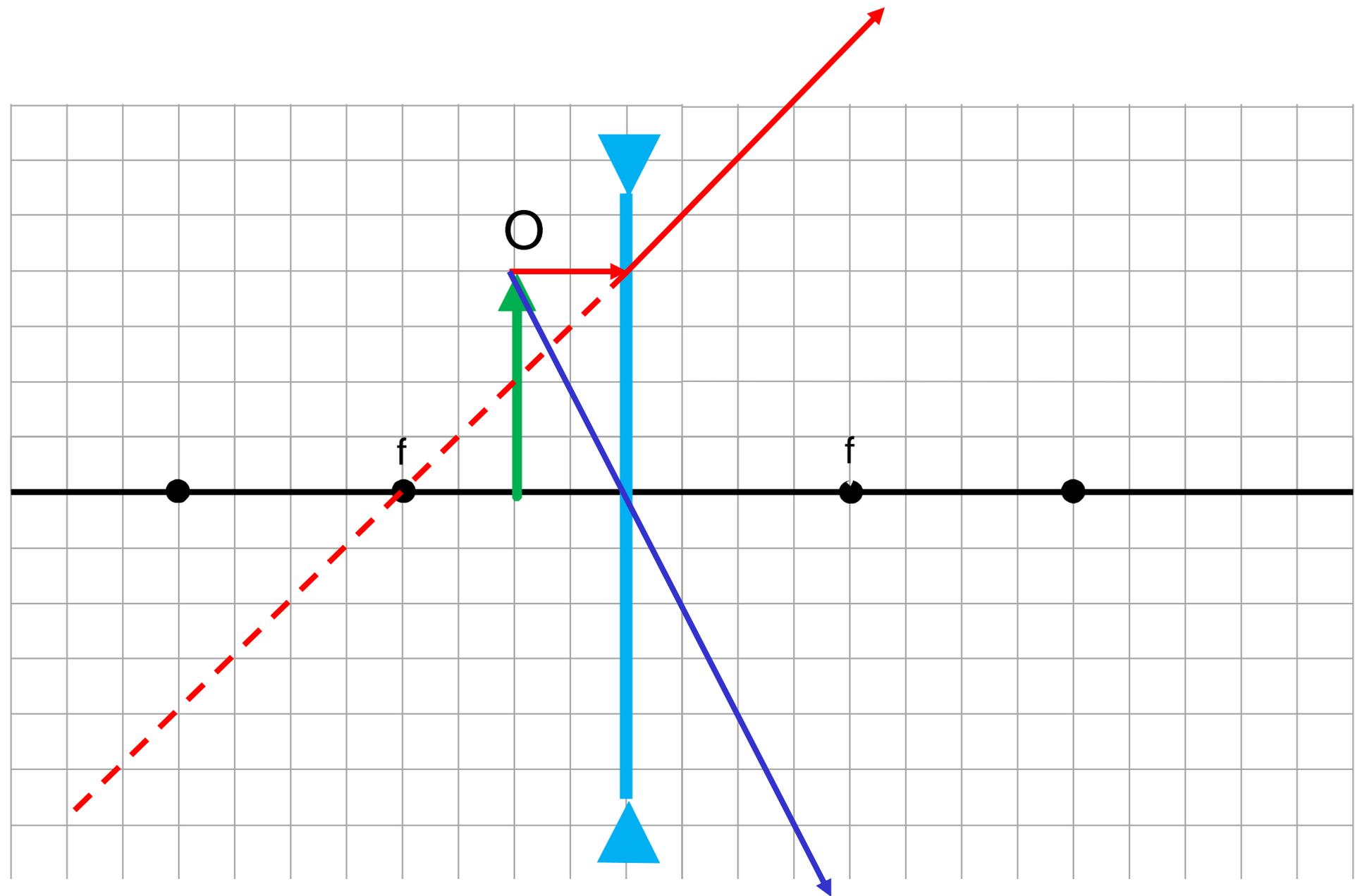


Figura 7: Objeto entre o vértice e o foco

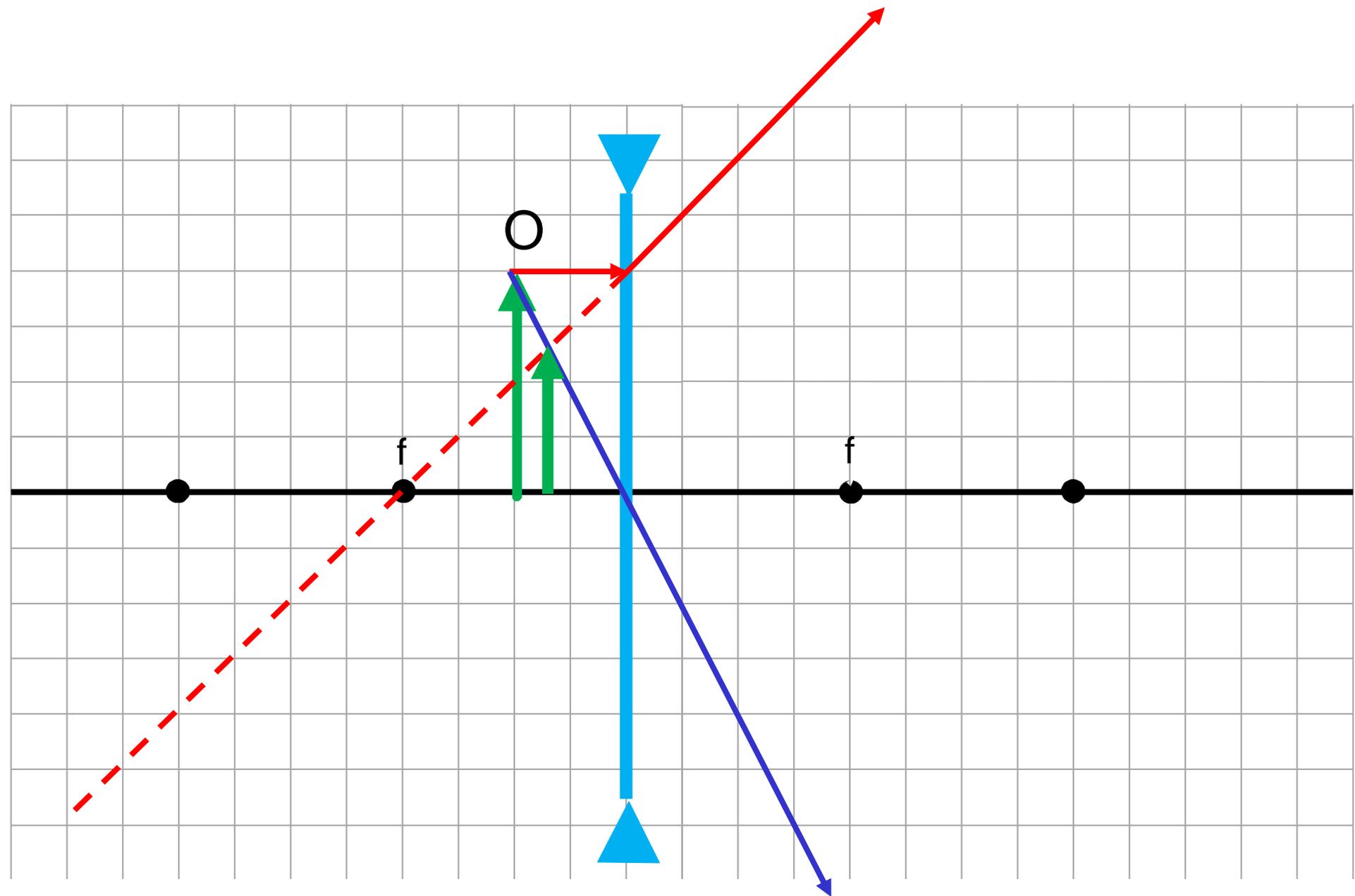


Figura 7: Objeto entre o vértice e o foco

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA
MENOR

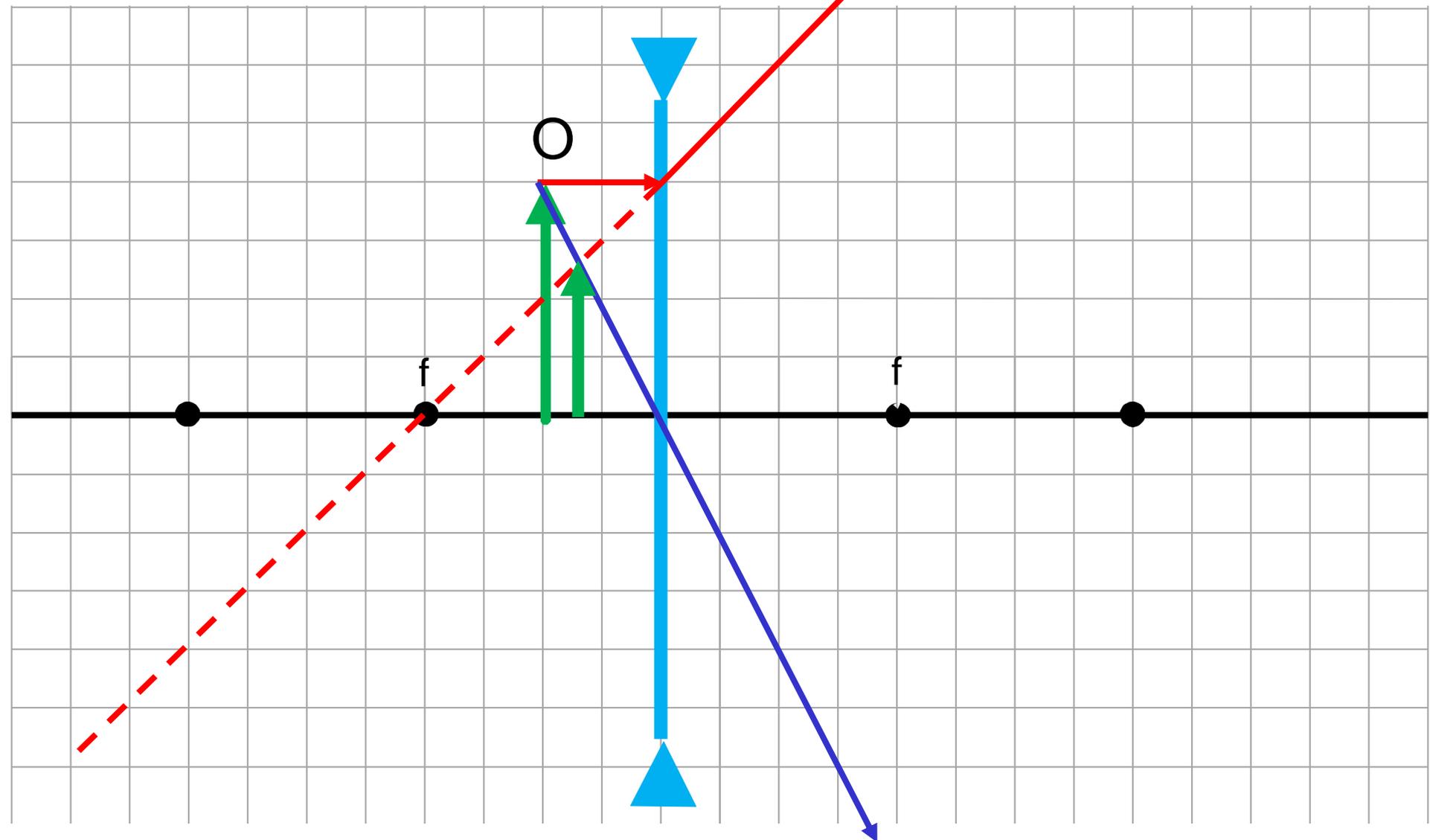
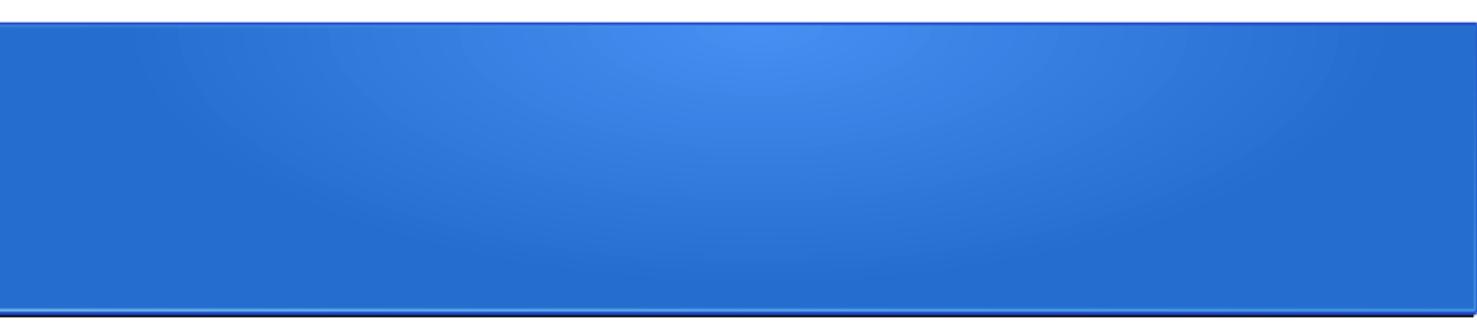


Figura 7: Objeto entre o vértice e o foco



Segundo caso

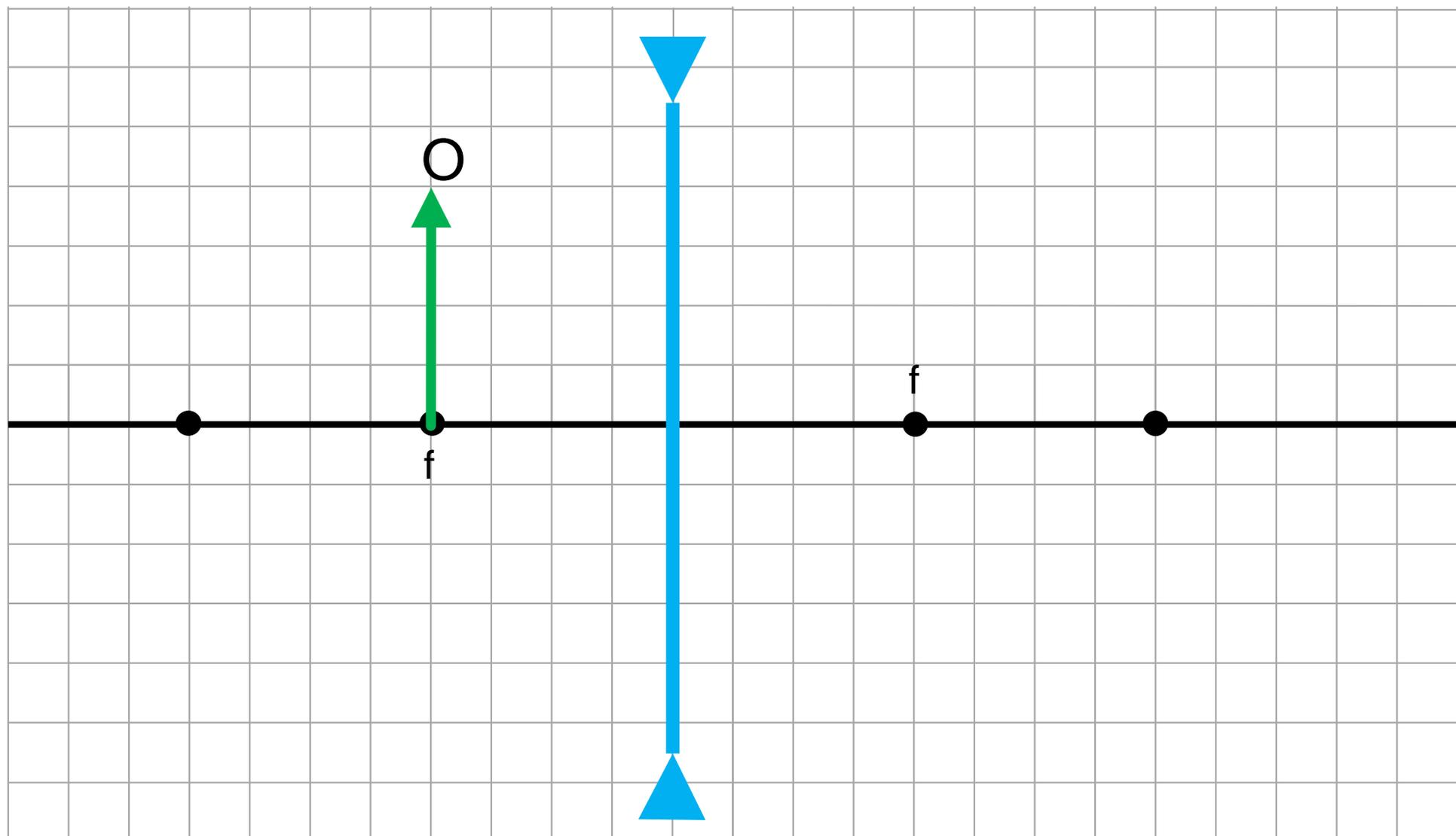


Figura 8: Objeto no foco

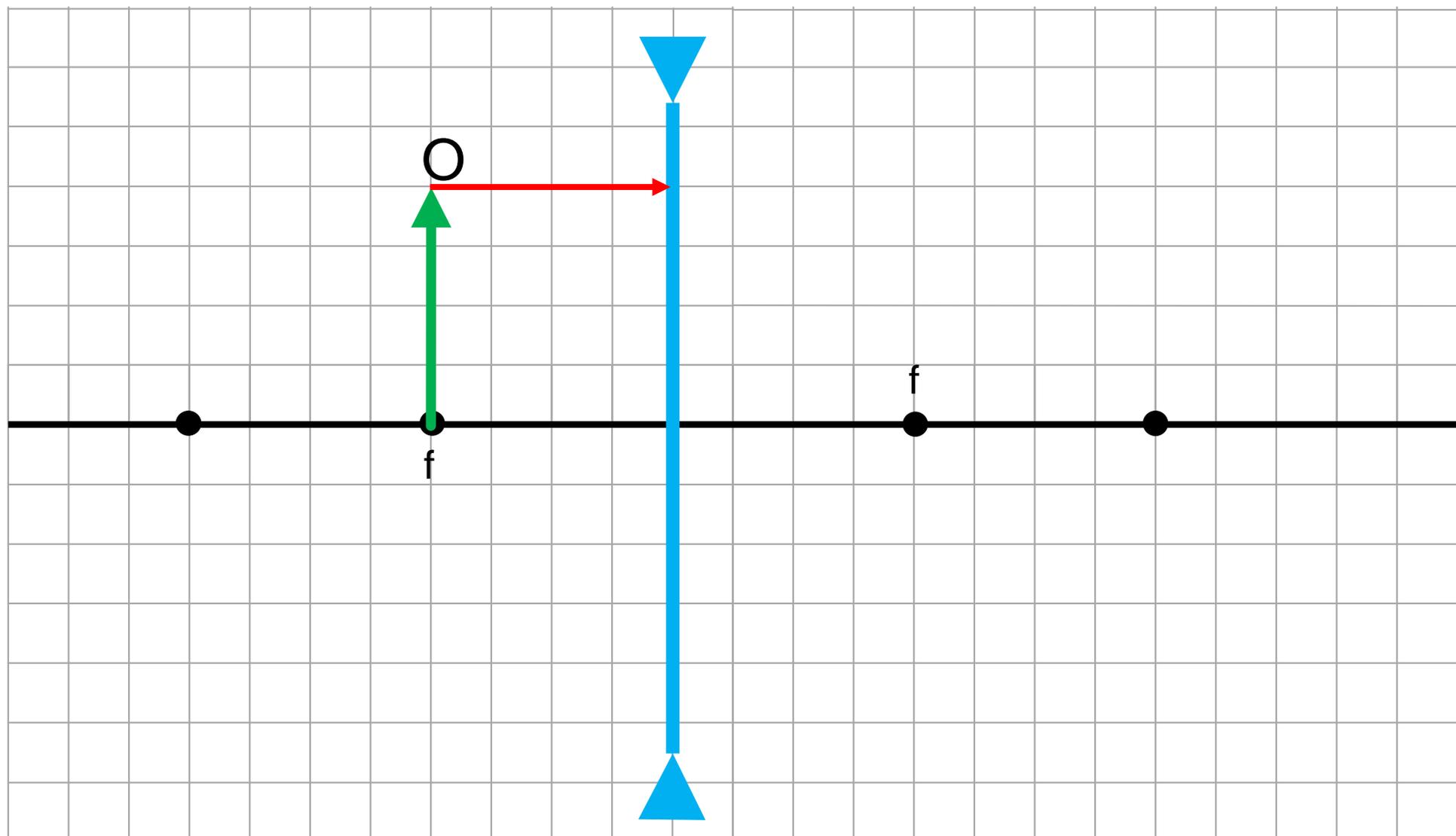


Figura 8: Objeto no foco

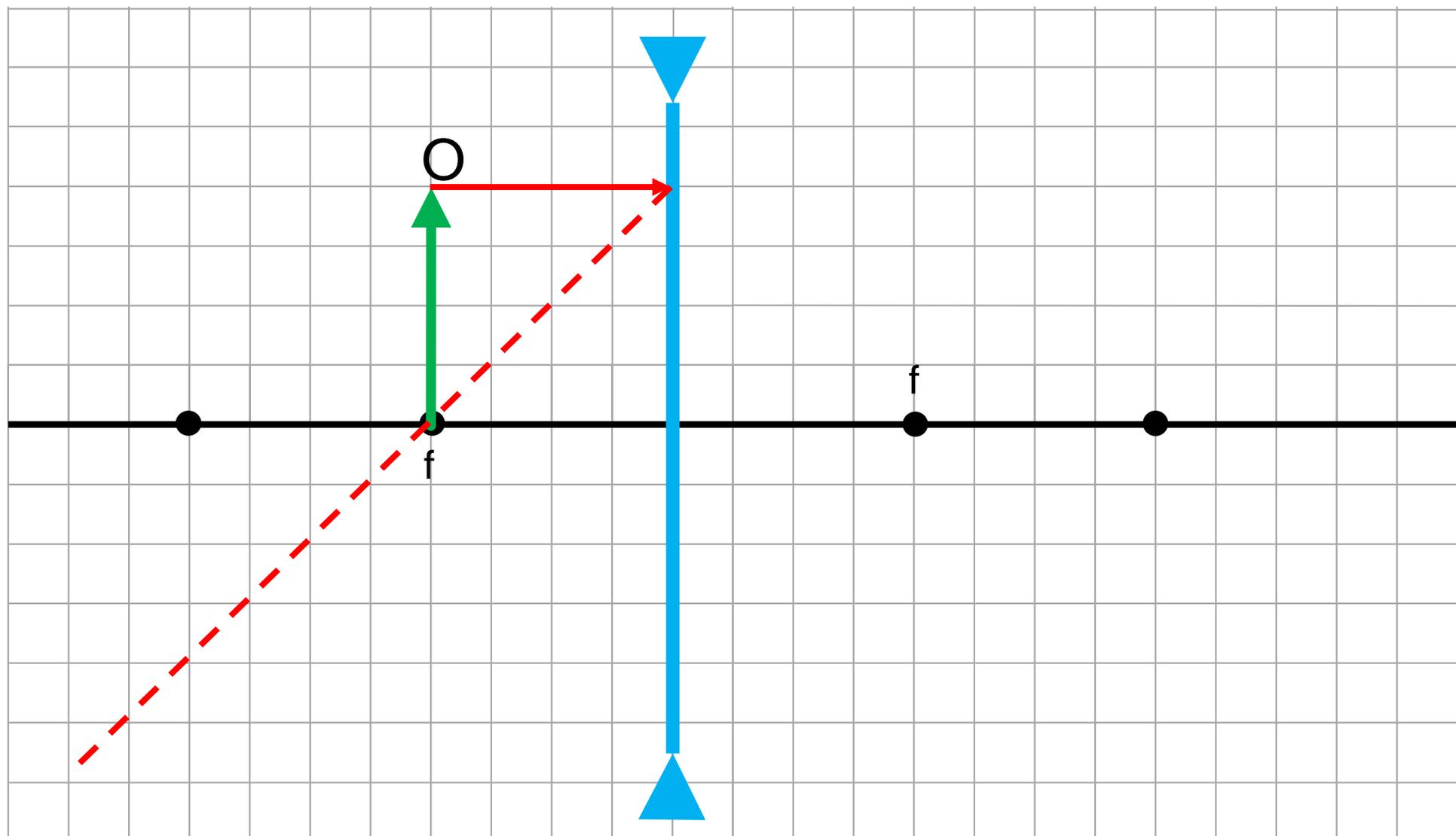


Figura 8: Objeto no foco

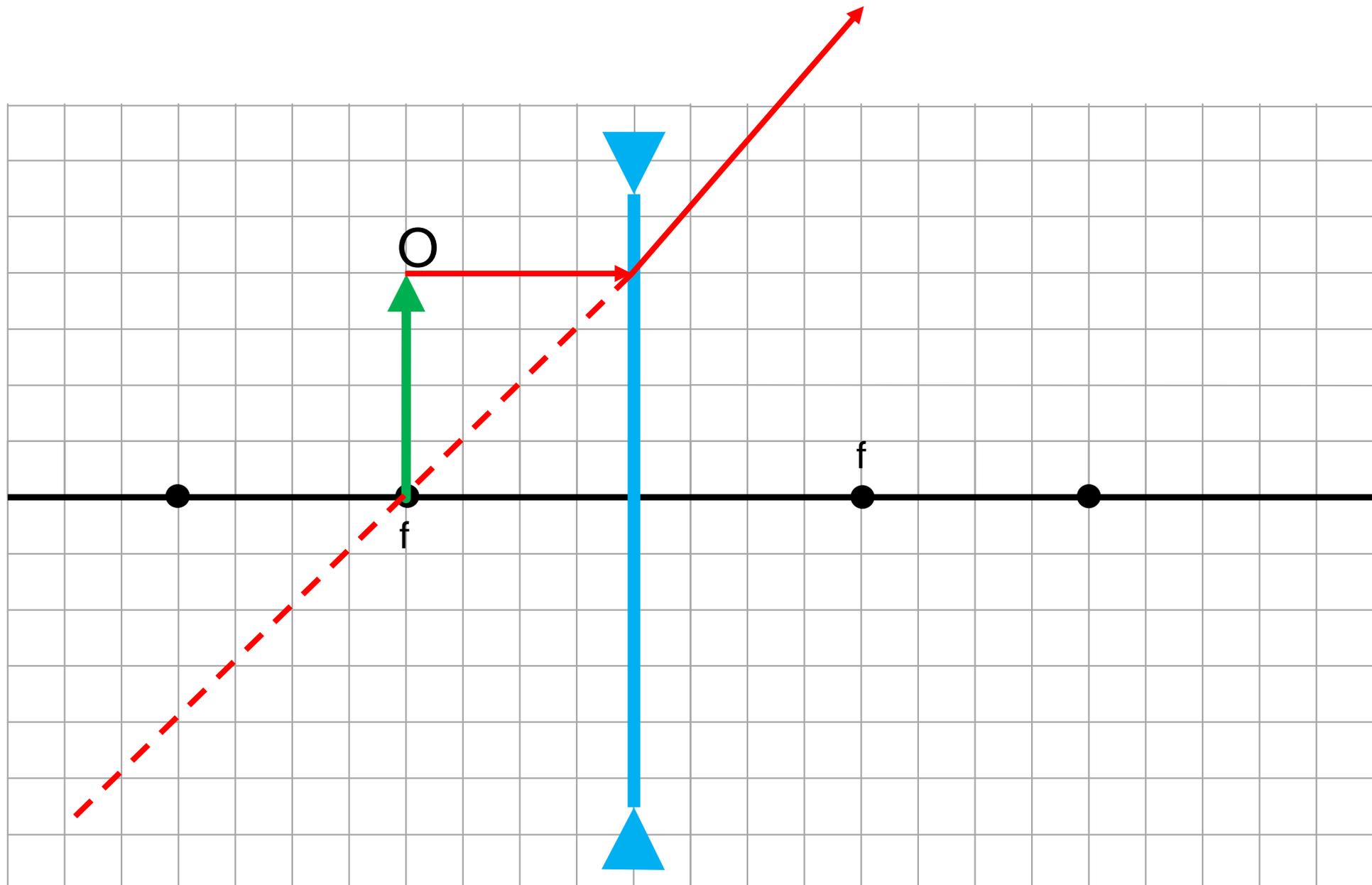


Figura 8: Objeto no foco

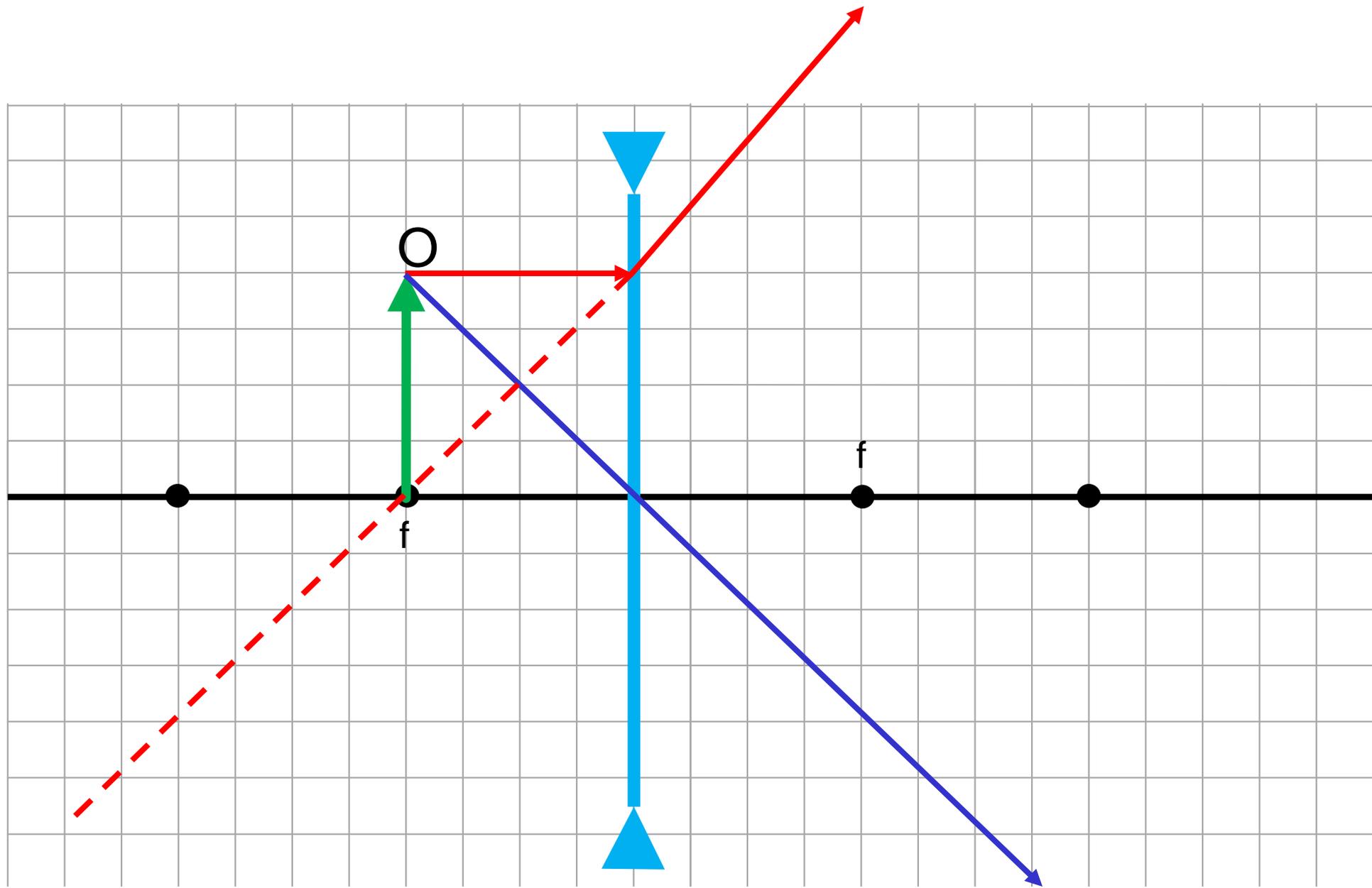


Figura 8: Objeto no foco

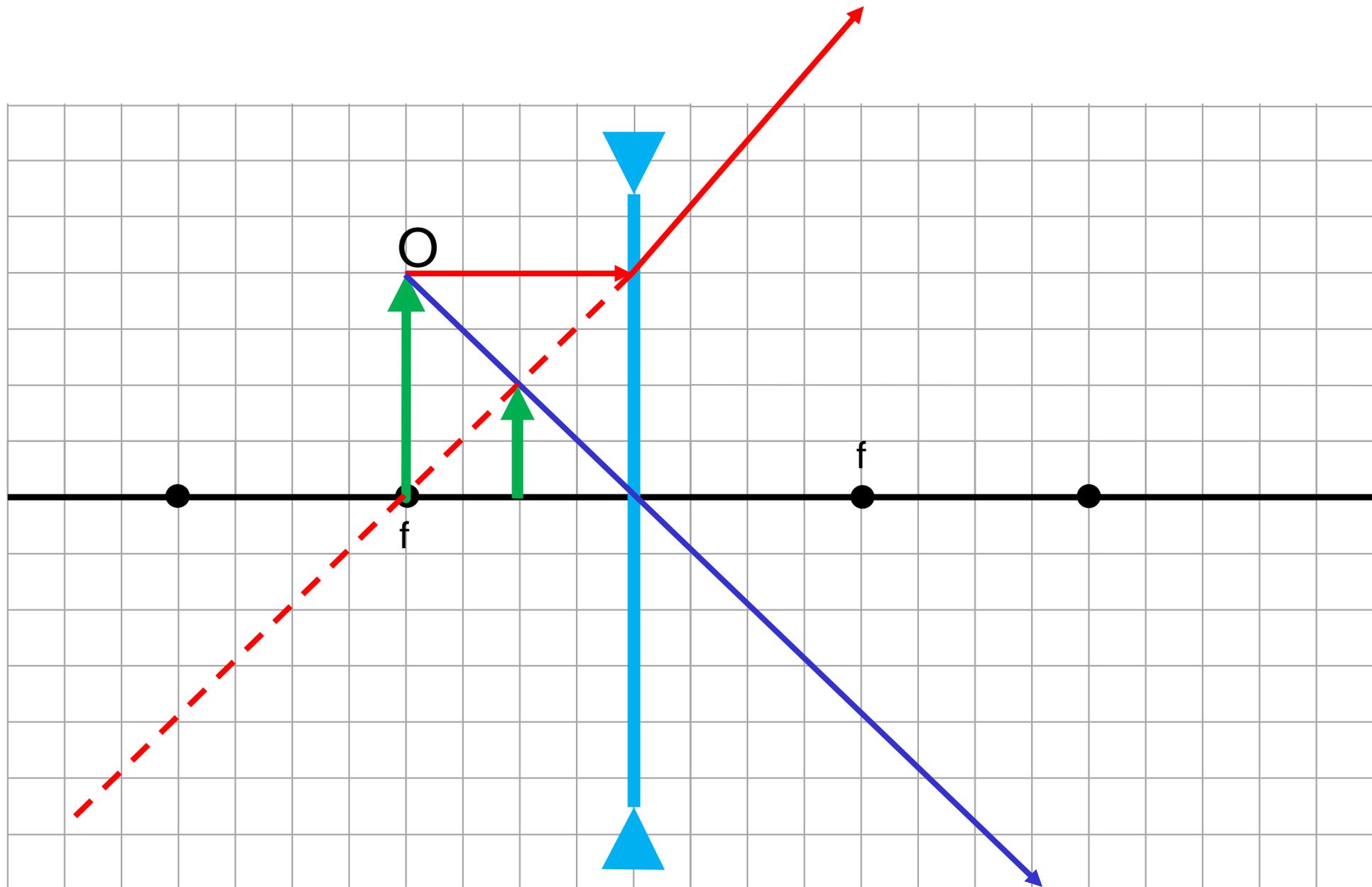


Figura 8: Objeto no foco

CLASSIFICAÇÃO:

Imagem

VIRTUAL

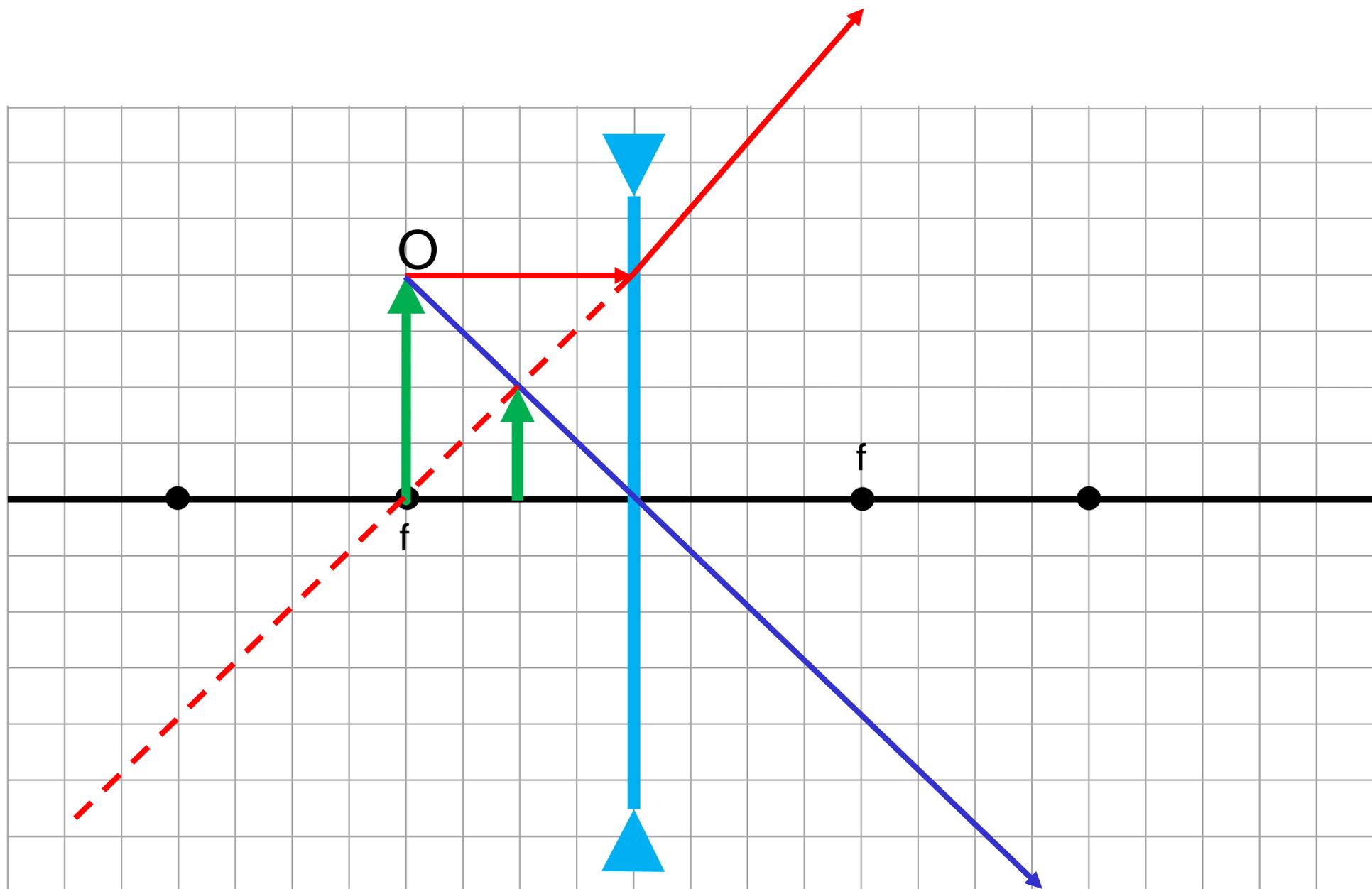


Figura 8: Objeto no foco

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA

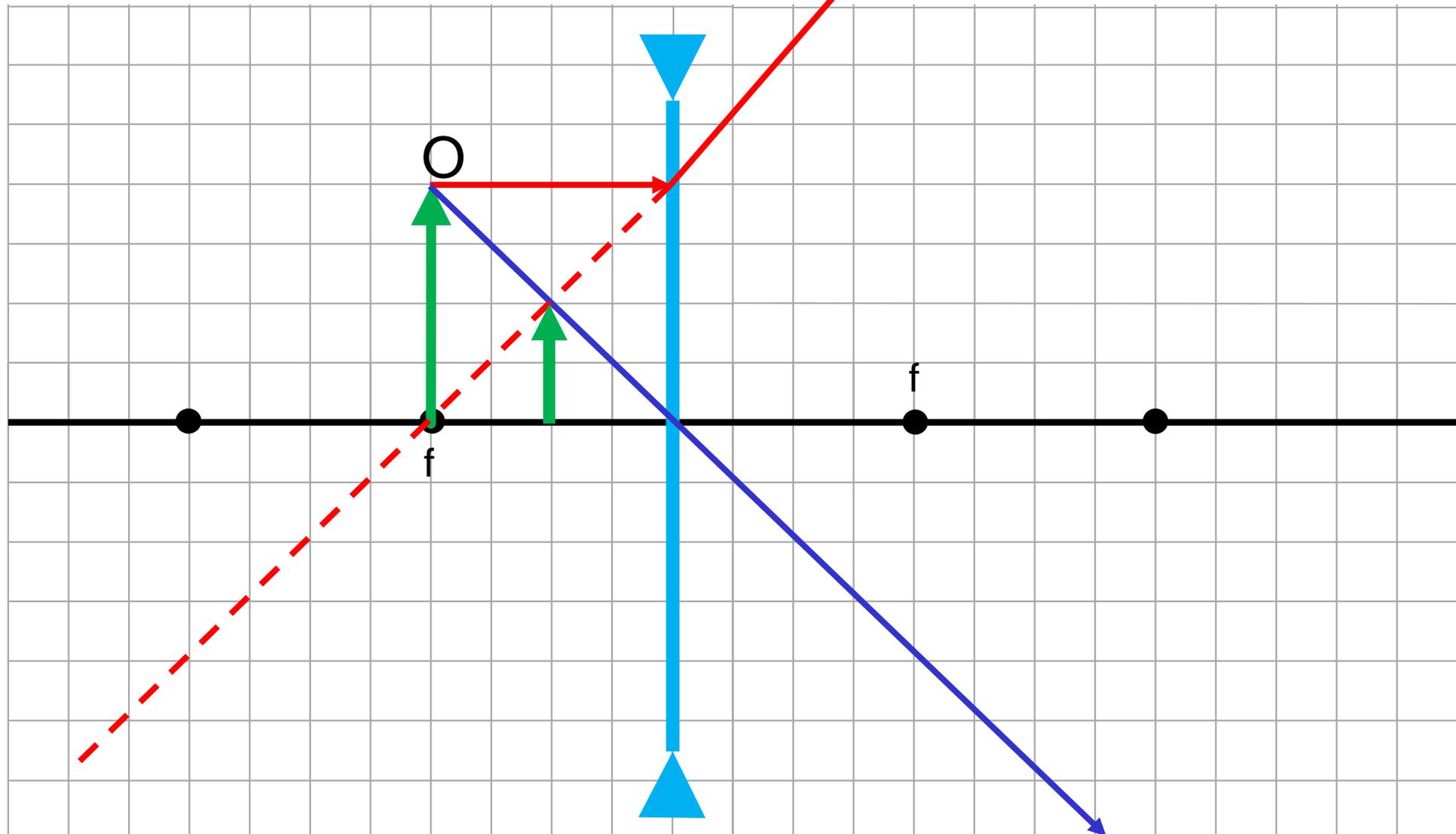


Figura 8: Objeto no foco

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA
MENOR

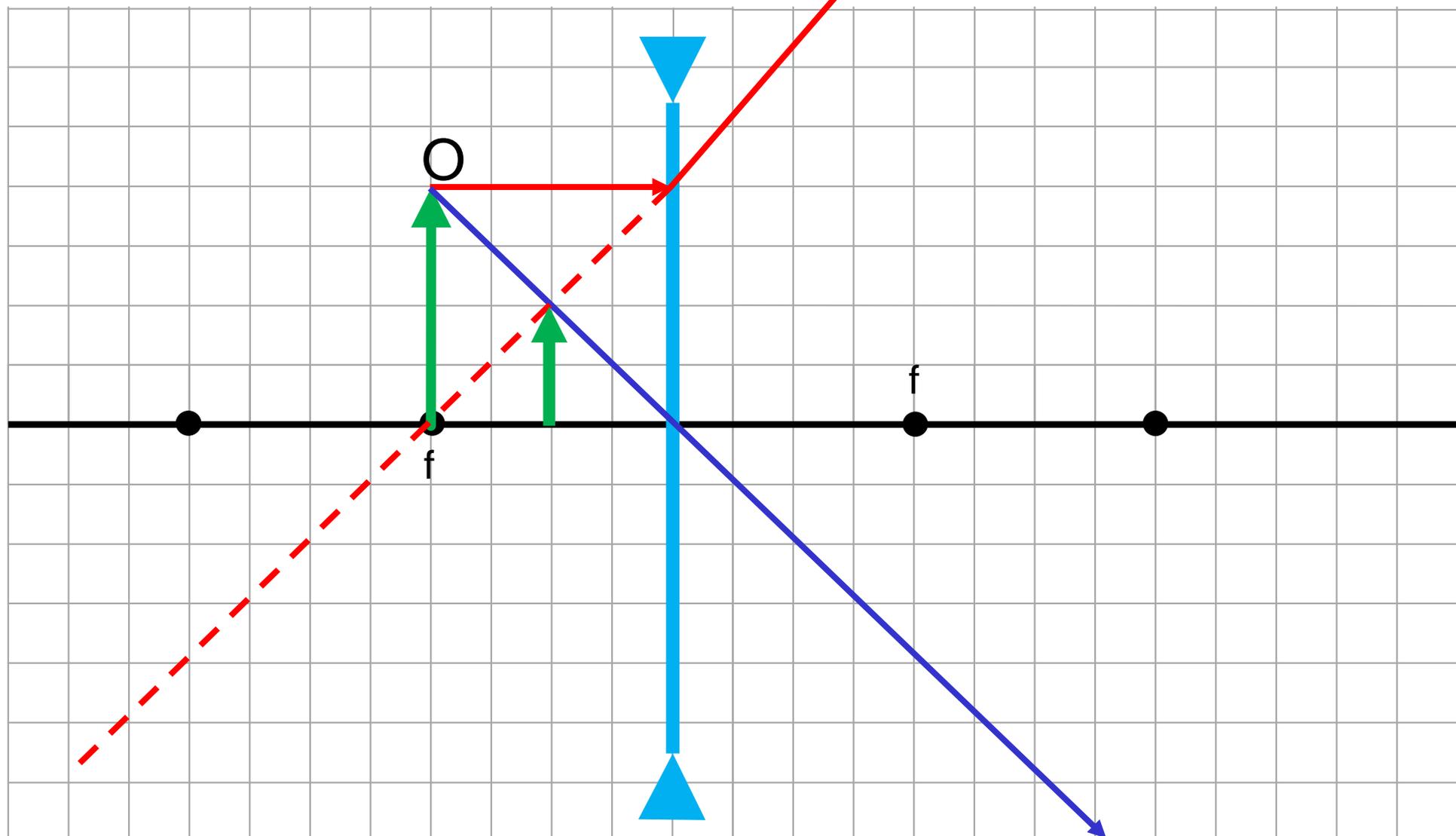
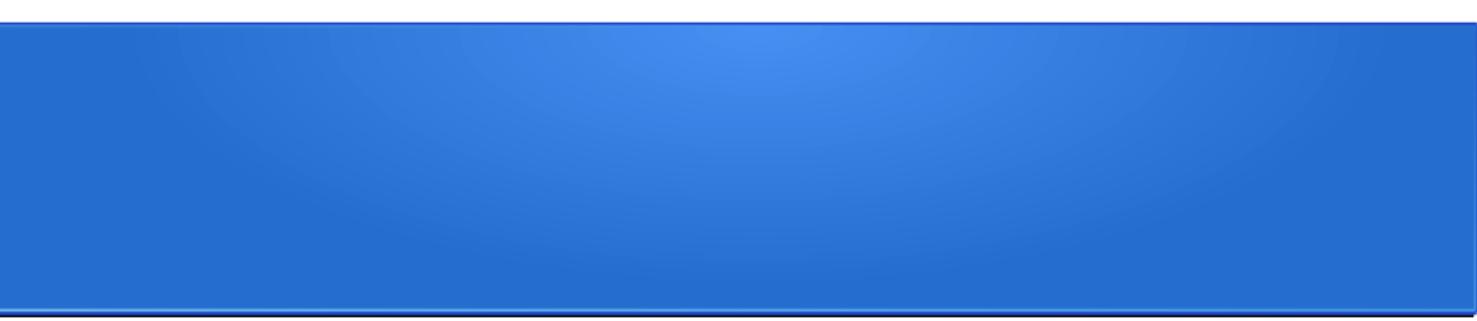


Figura 8: Objeto no foco



Terceiro caso

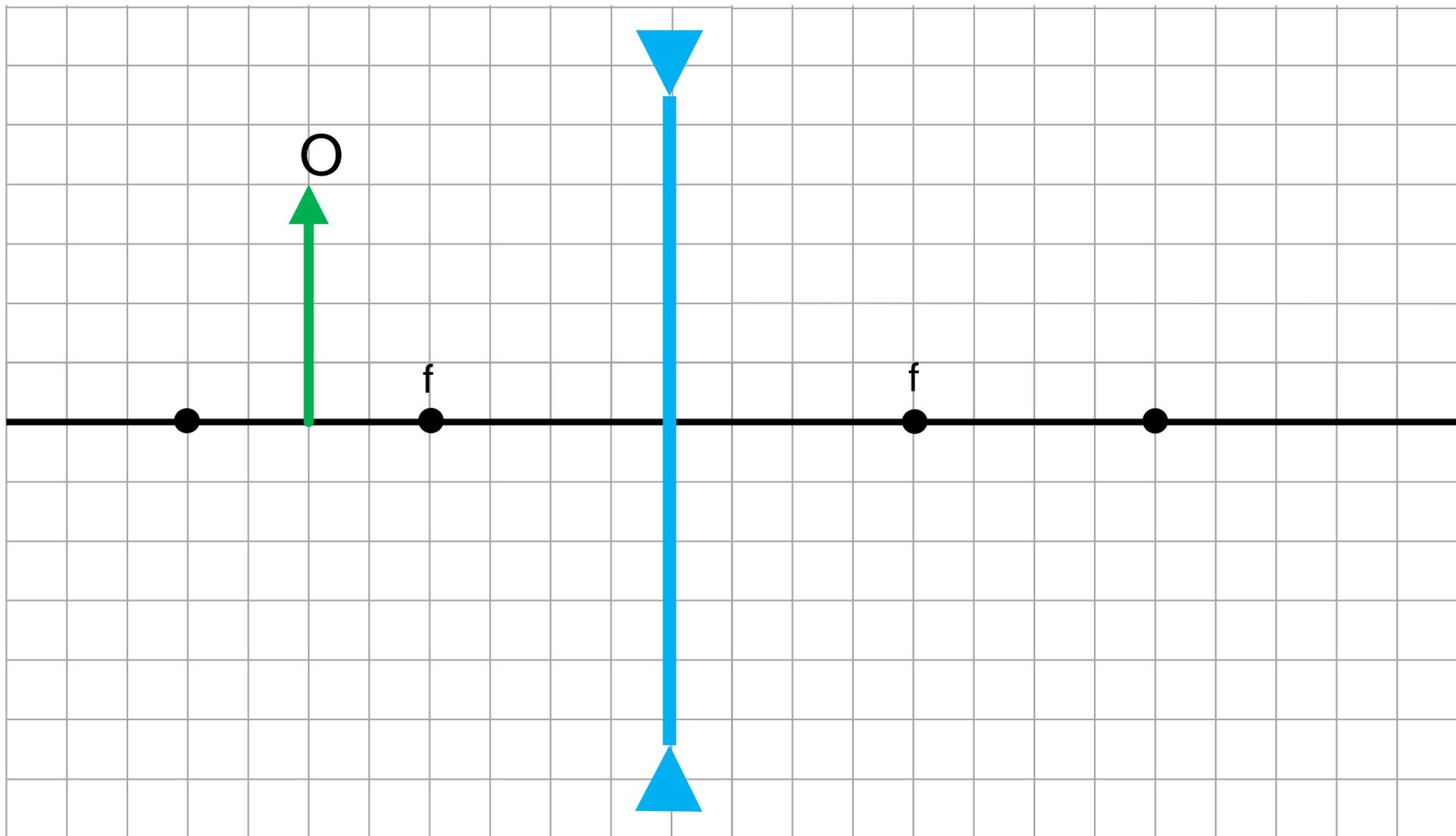


Figura 9: Objeto entre o foco e o anti-principal

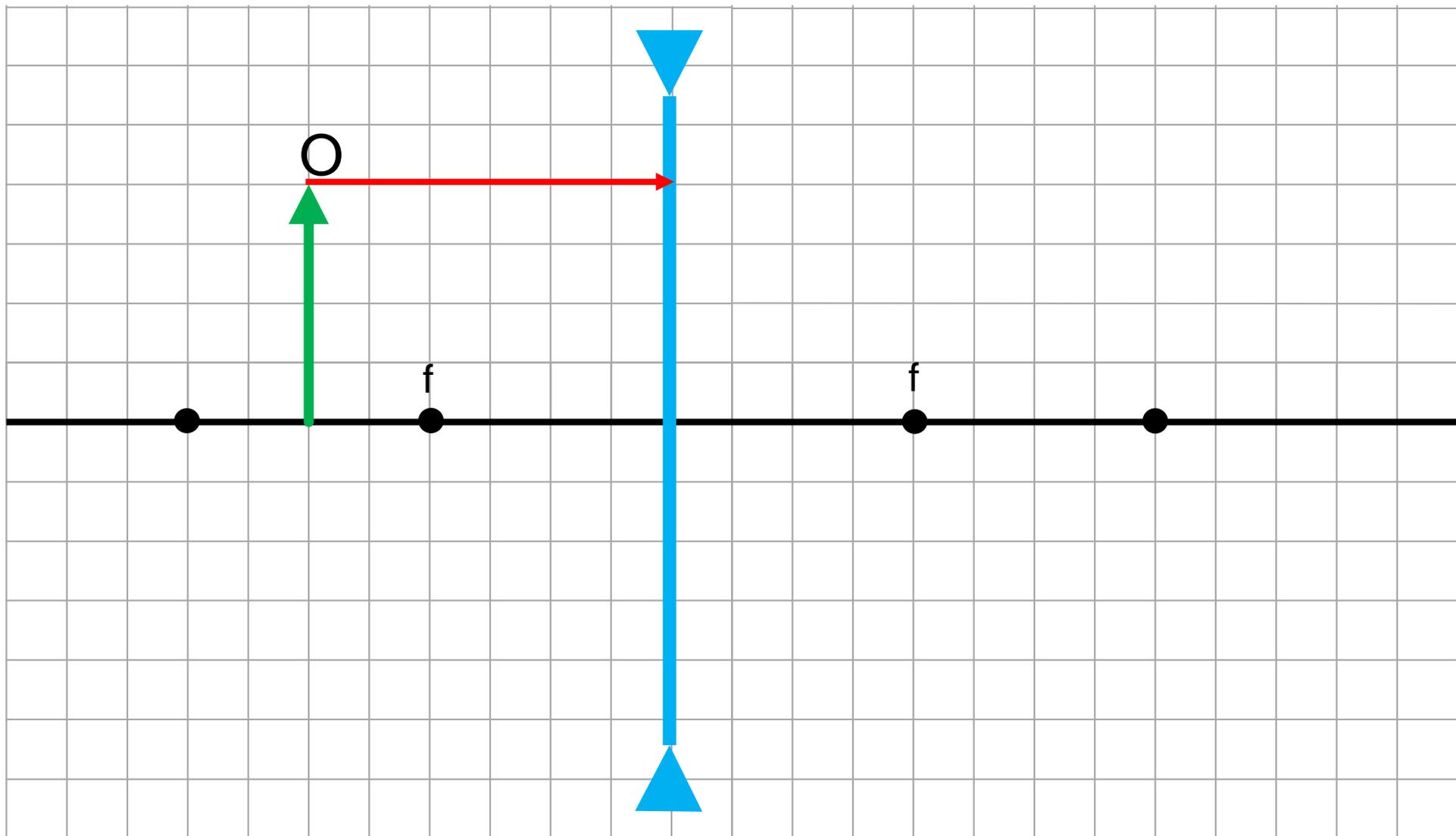


Figura 9: Objeto entre o foco e o anti-principal

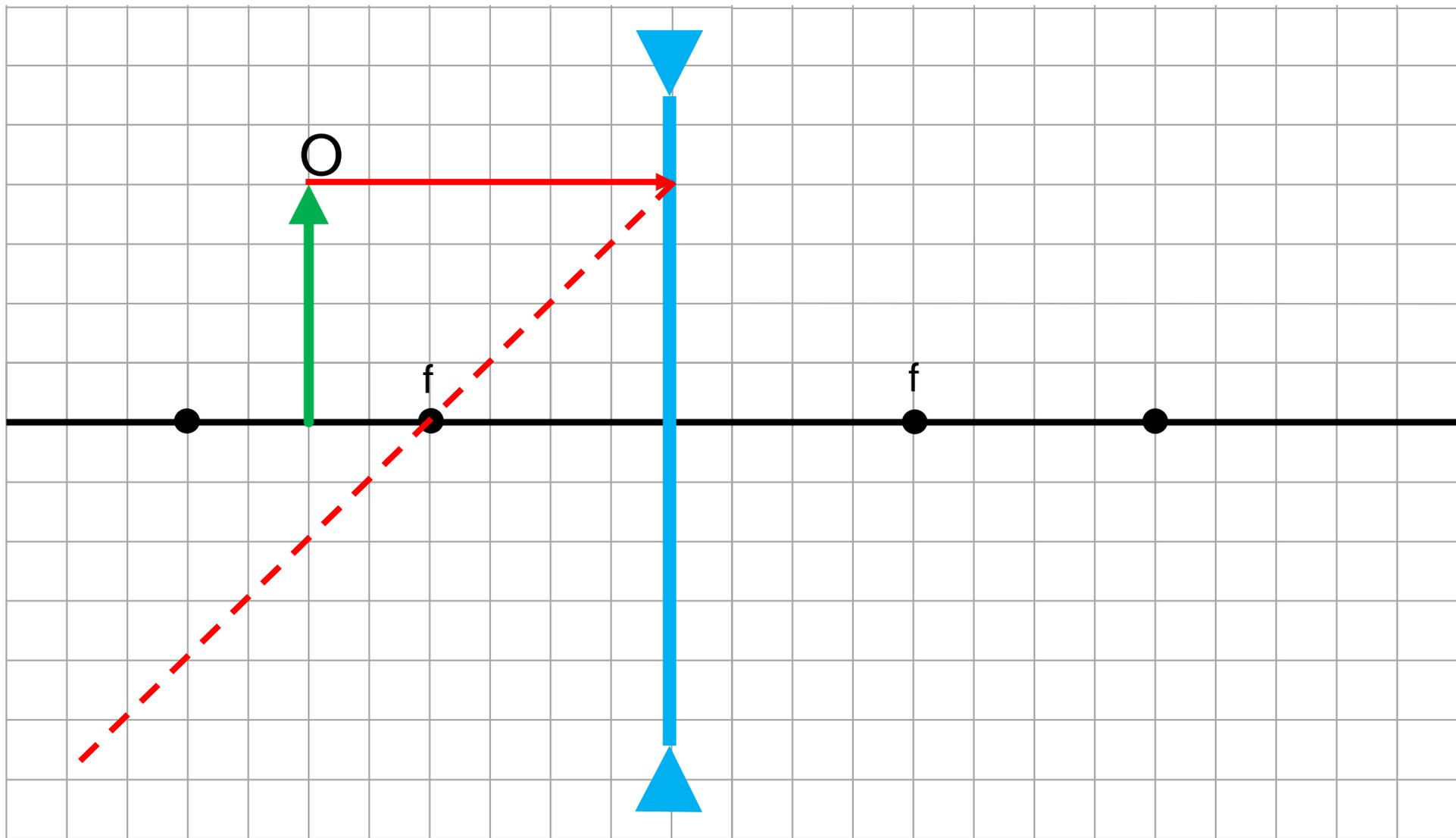


Figura 9: Objeto entre o foco e o anti-principal

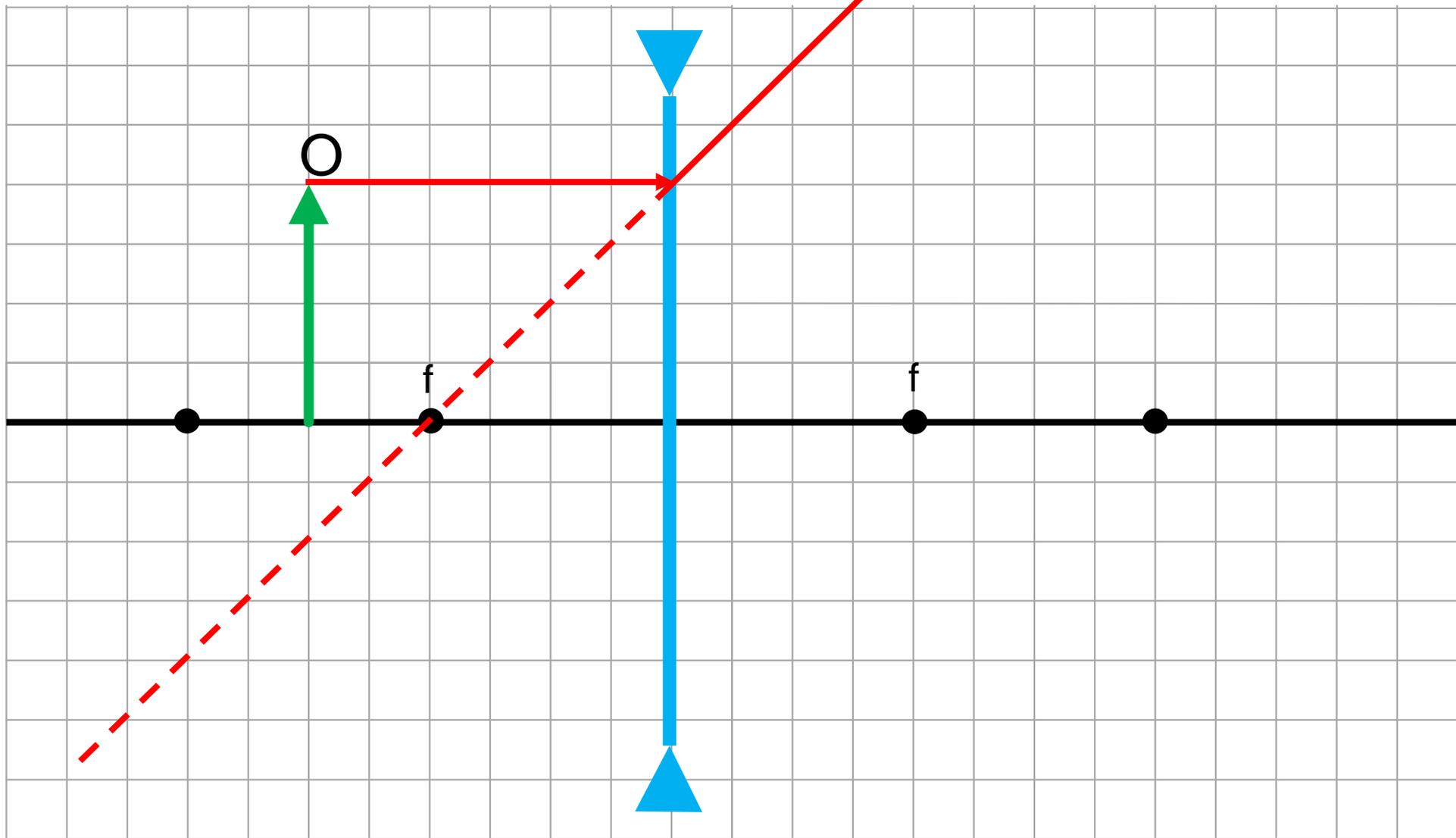


Figura 9: Objeto entre o foco e o anti-principal

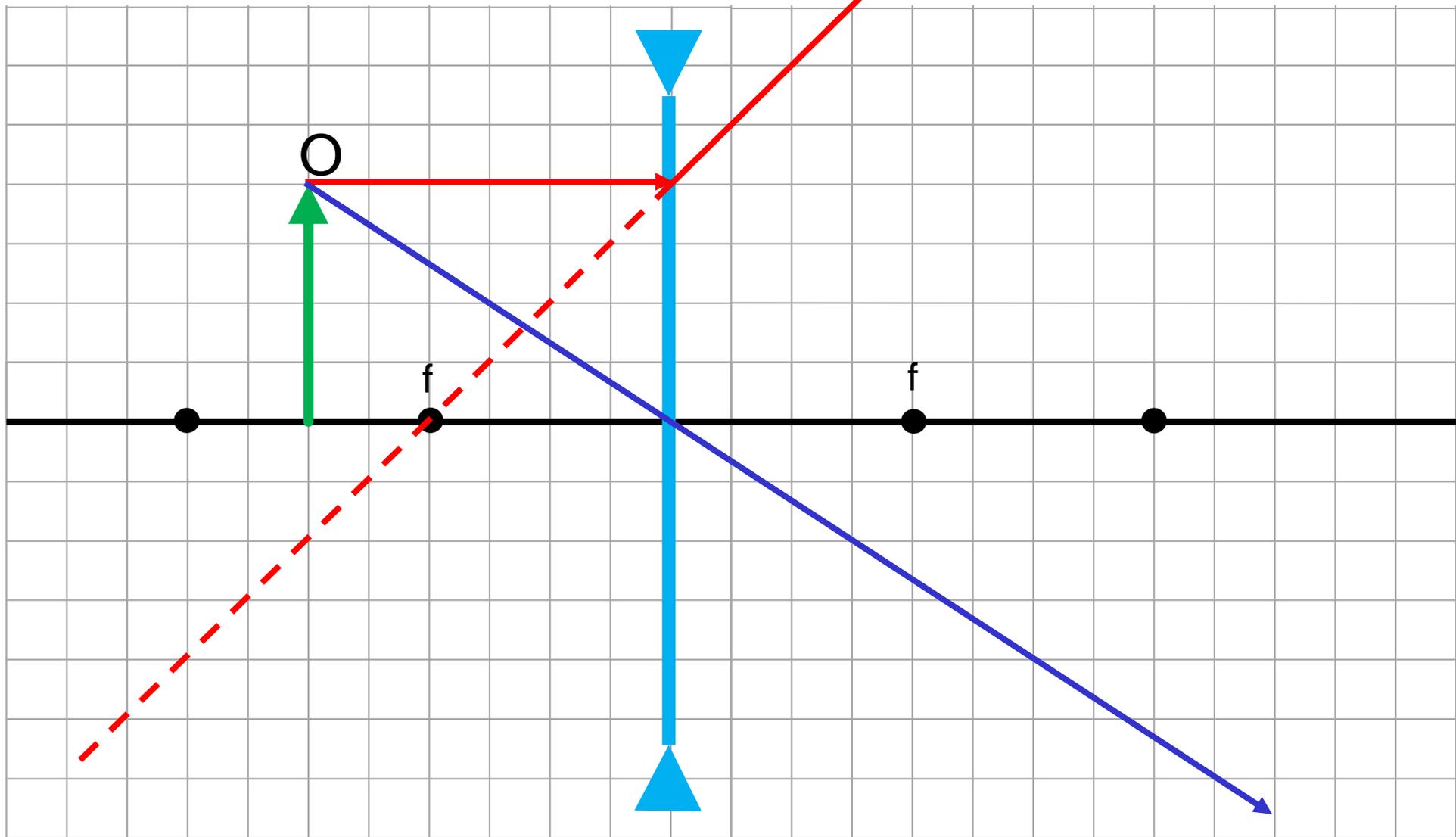


Figura 9: Objeto entre o foco e o anti-principal

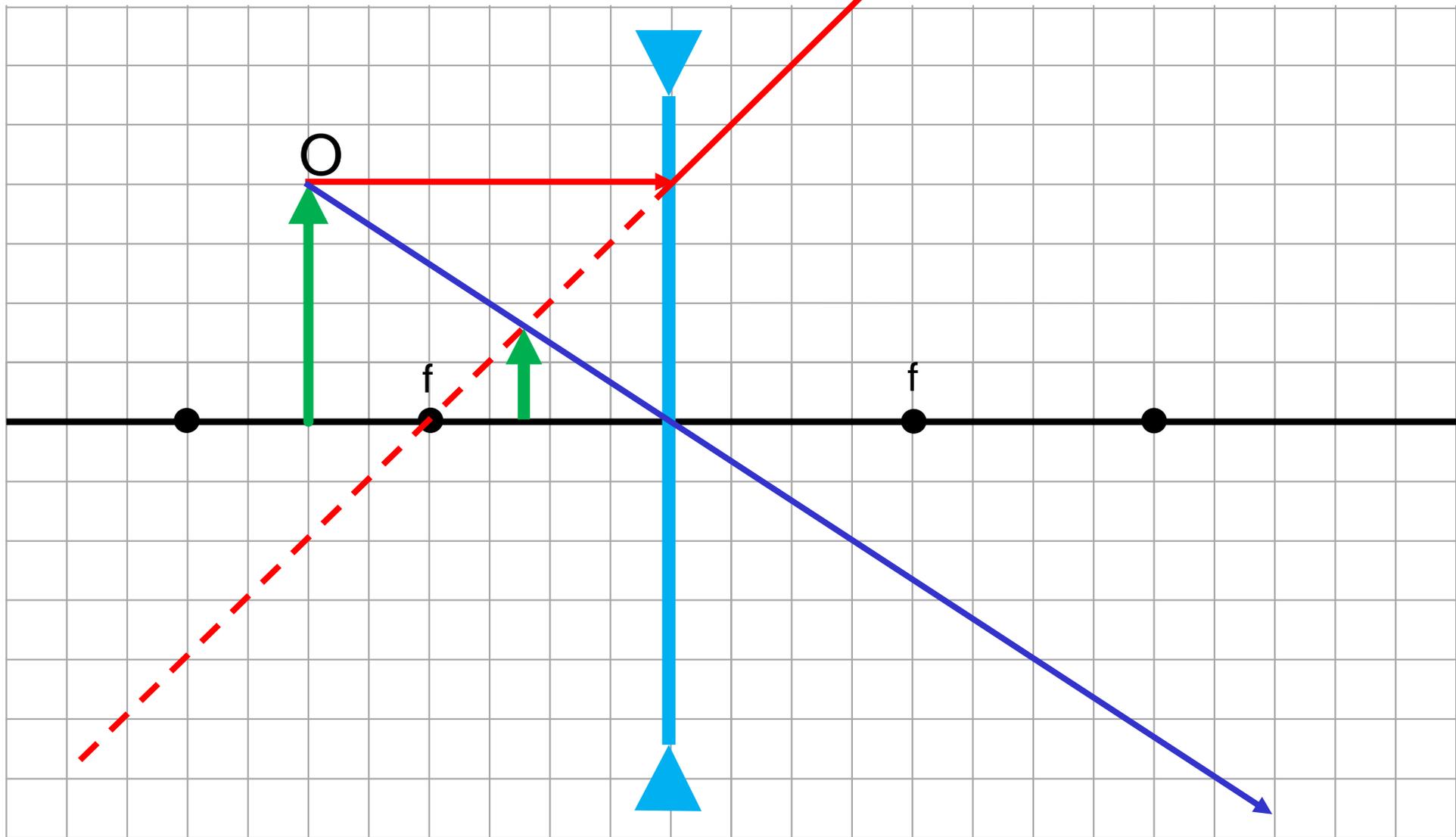


Figura 9: Objeto entre o foco e o anti-principal

CLASSIFICAÇÃO: Imagem VIRTUAL

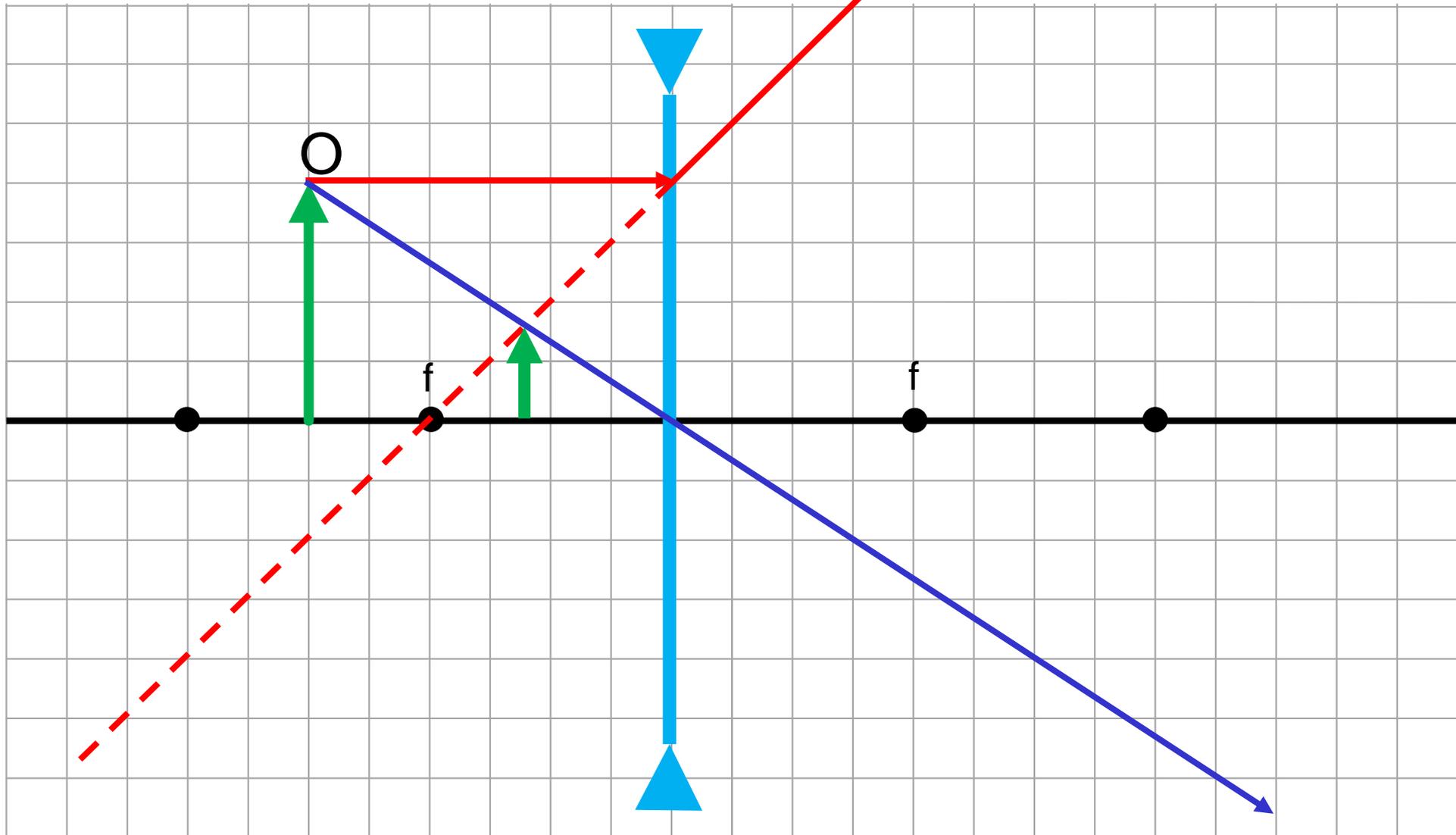


Figura 9: Objeto entre o foco e o anti-principal

CLASSIFICAÇÃO:

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VIRTUAL
DIREITA

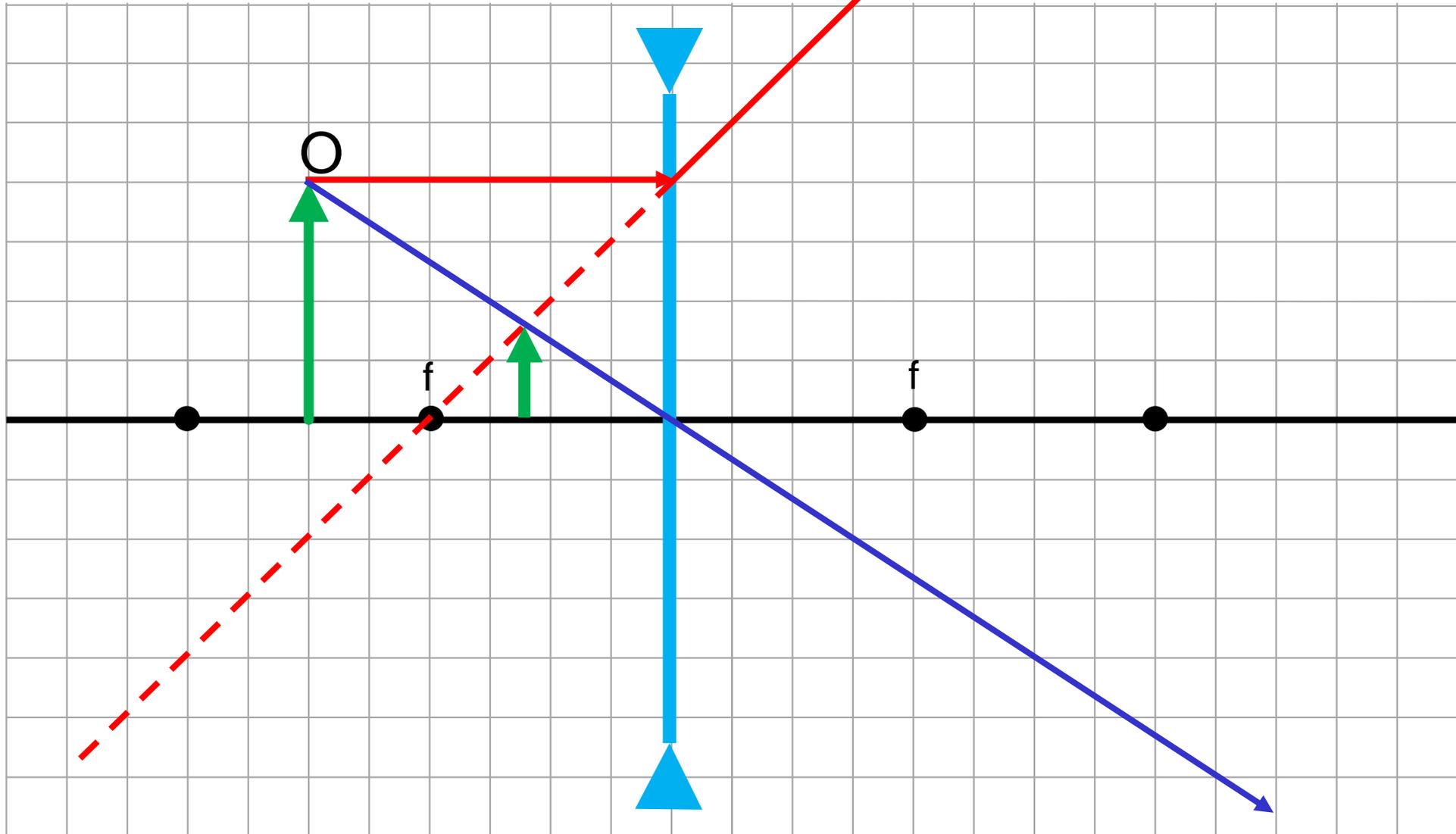


Figura 9: Objeto entre o foco e o anti-principal

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA
MENOR

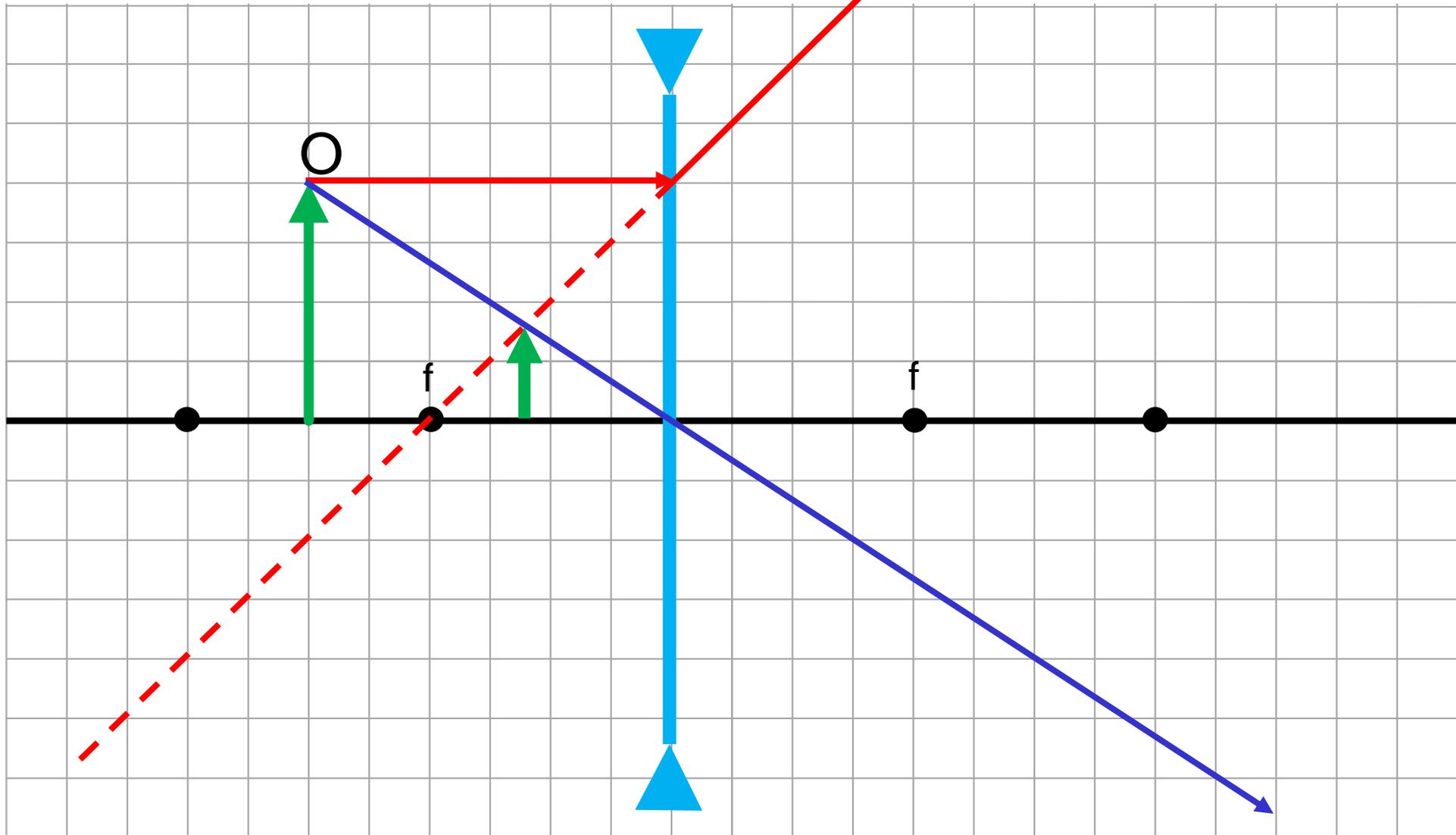
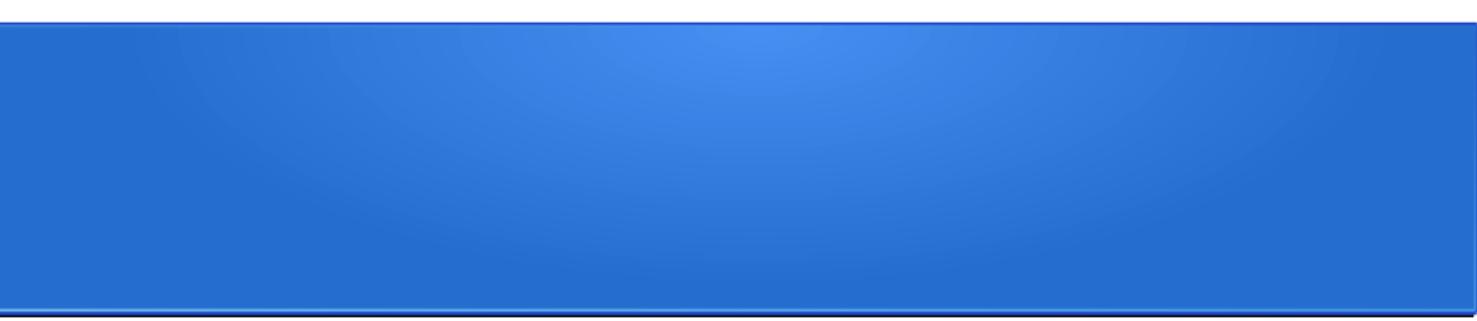


Figura 9: Objeto entre o foco e o anti-principal



Quarto caso

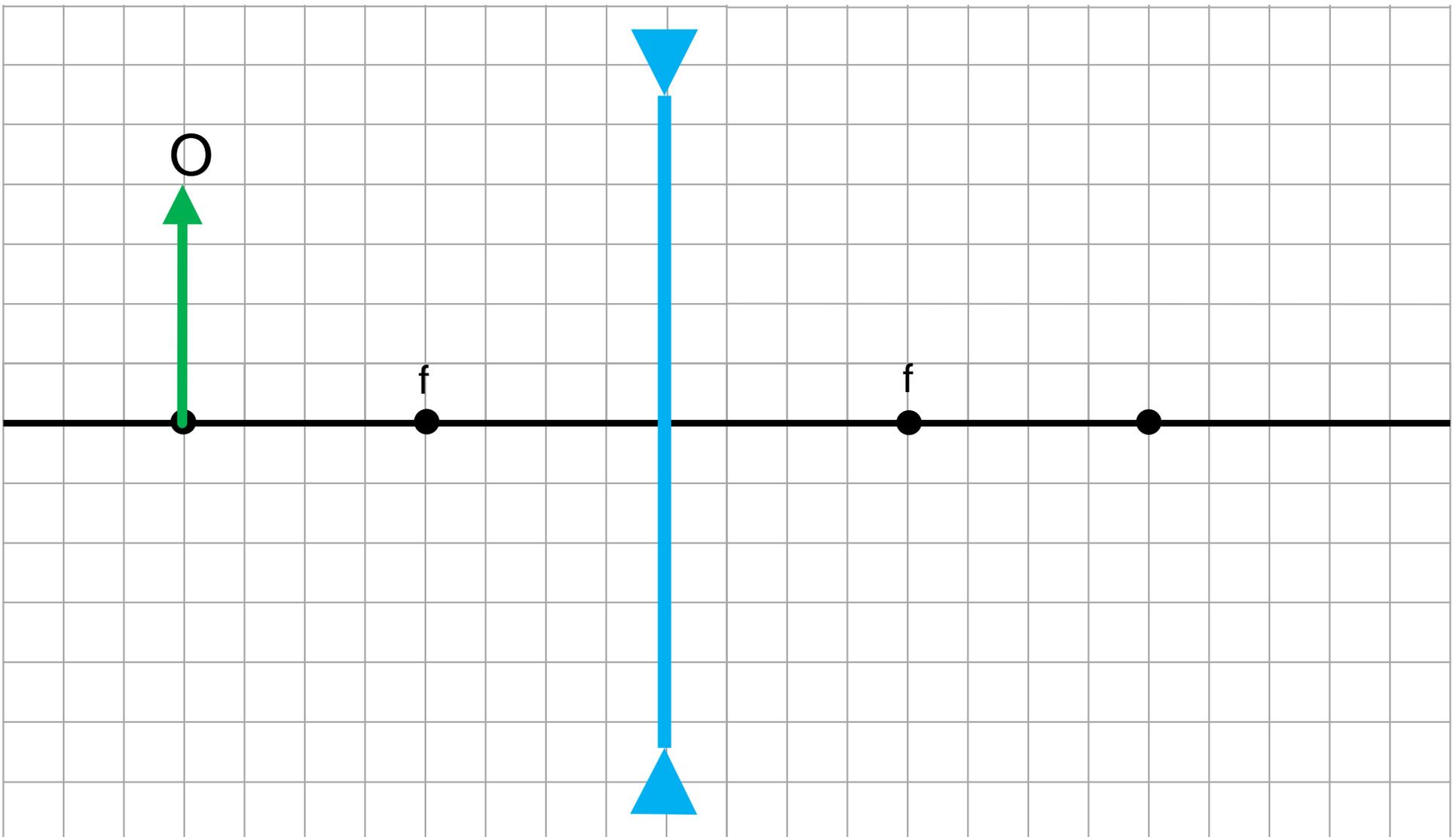


Figura 10: Objeto no anti-principal

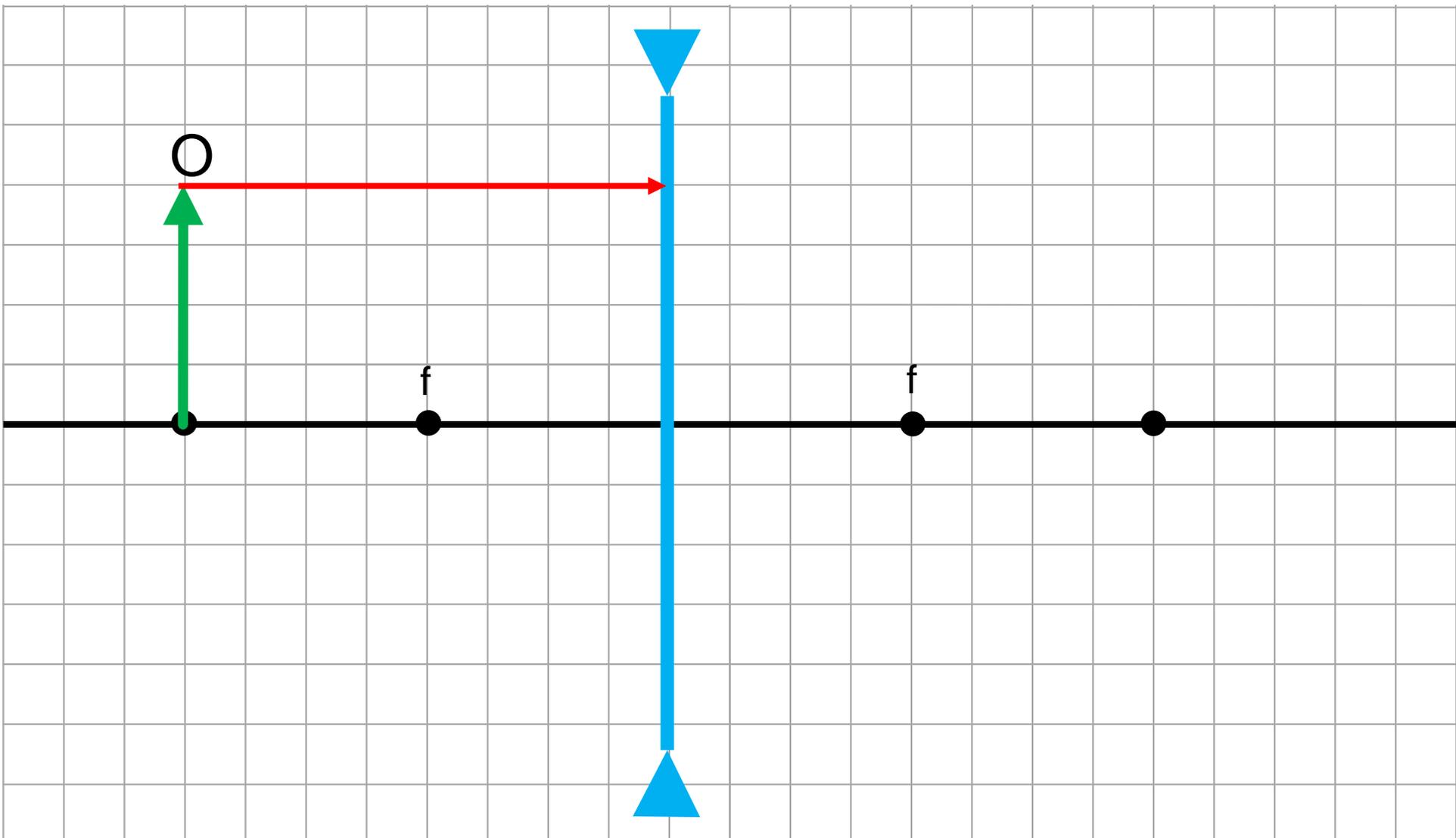


Figura 10: Objeto no anti-principal

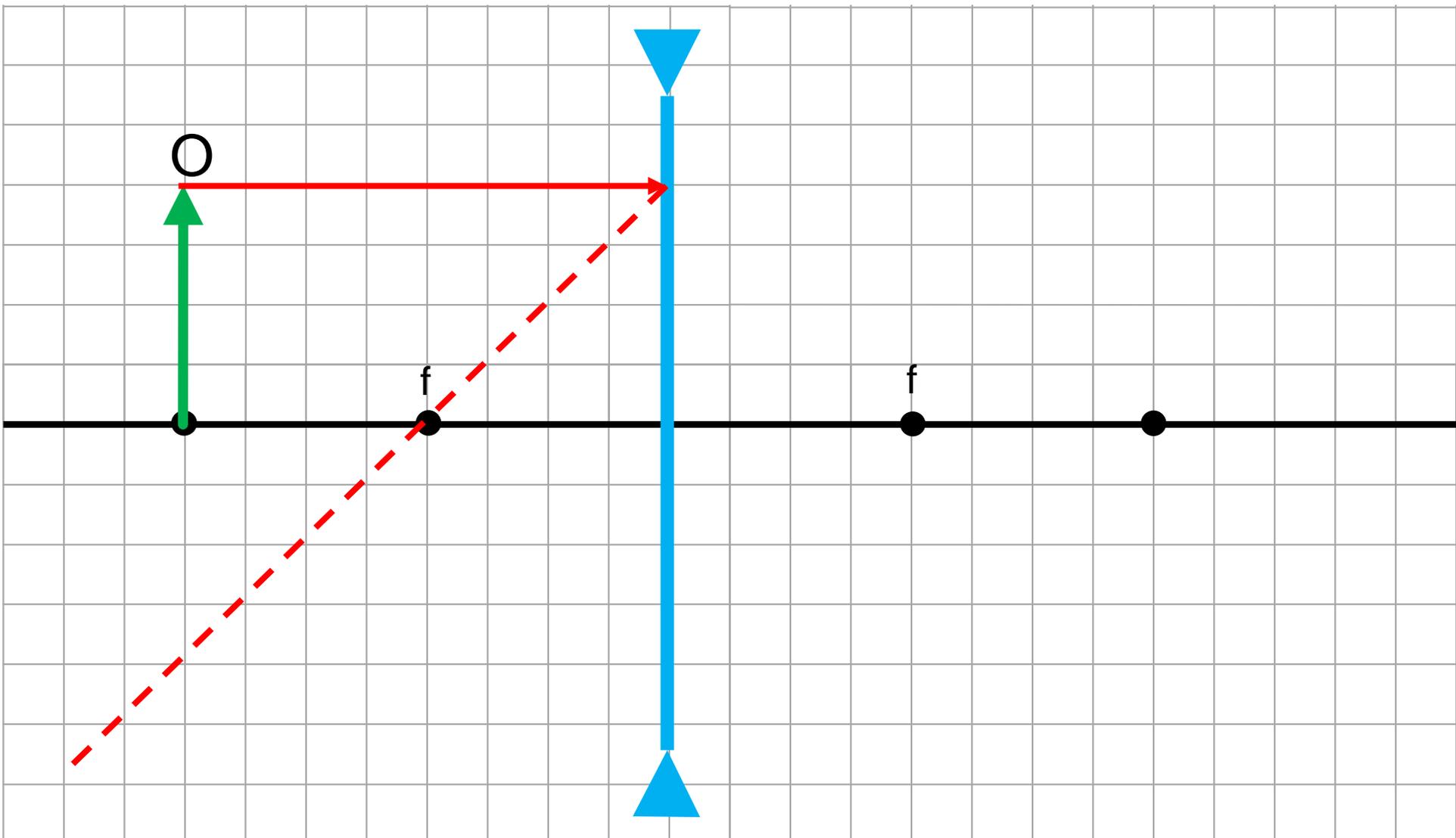


Figura 10: Objeto no anti-principal

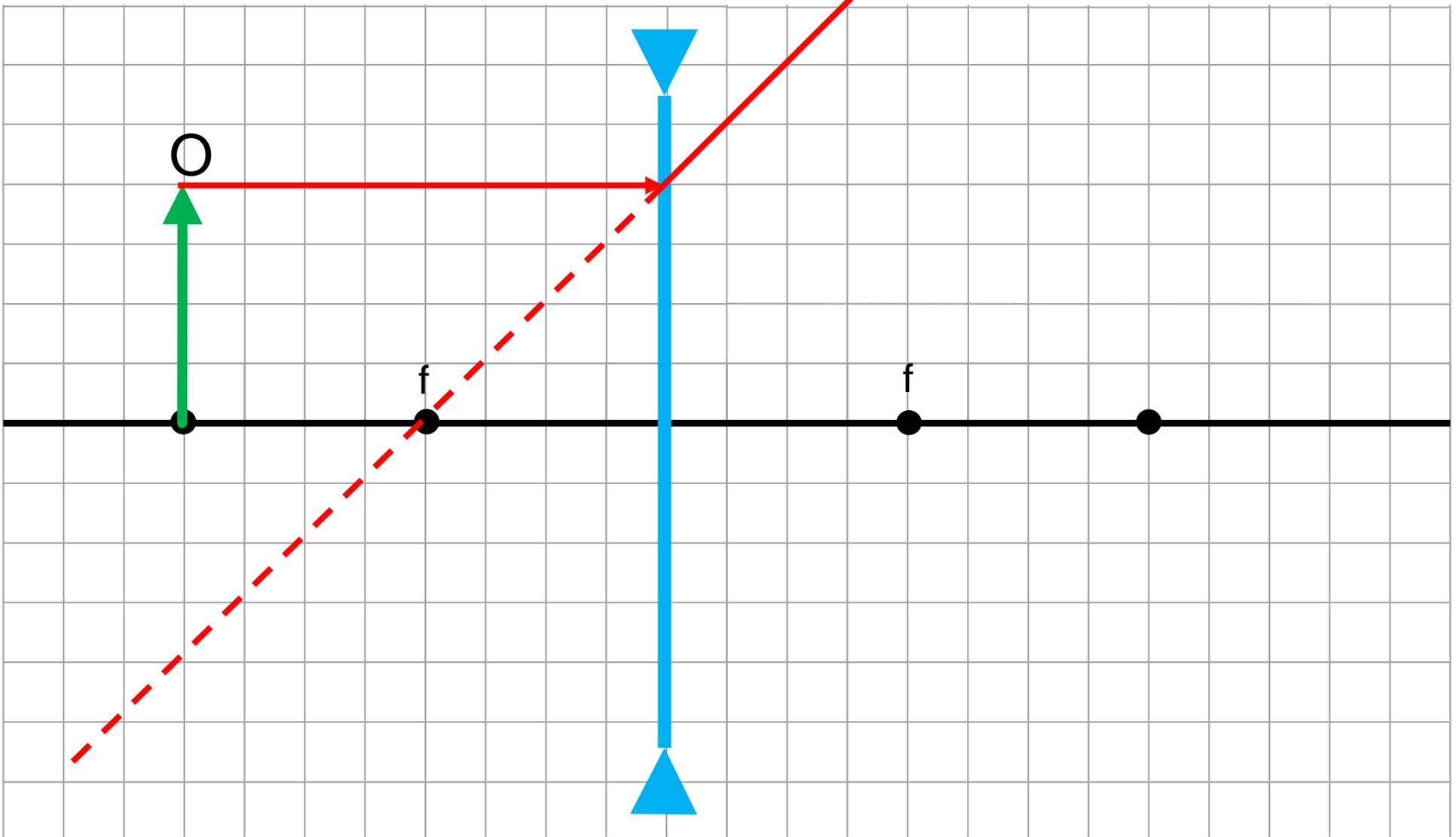


Figura 10: Objeto no anti-principal

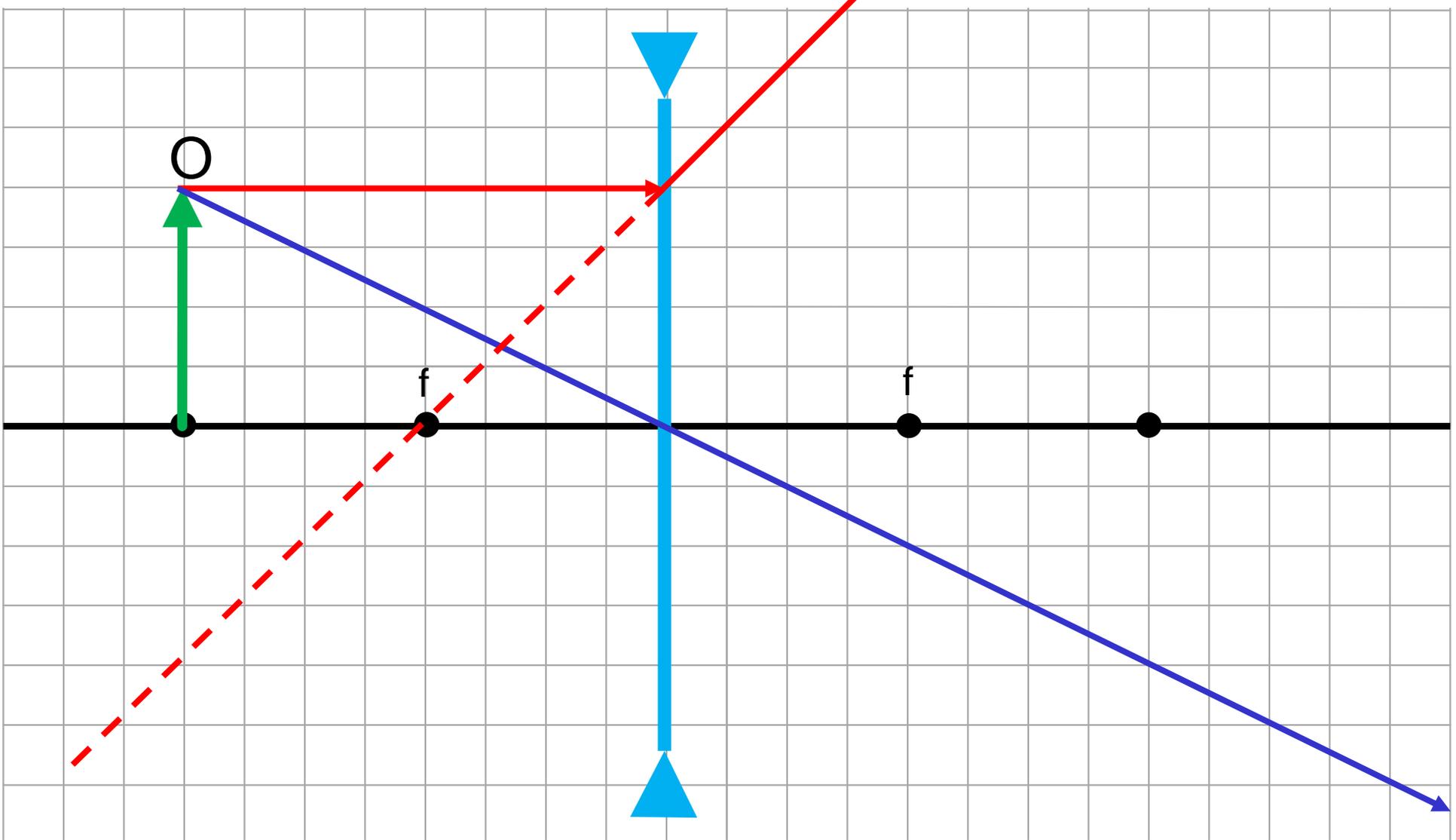


Figura 10: Objeto no anti-principal

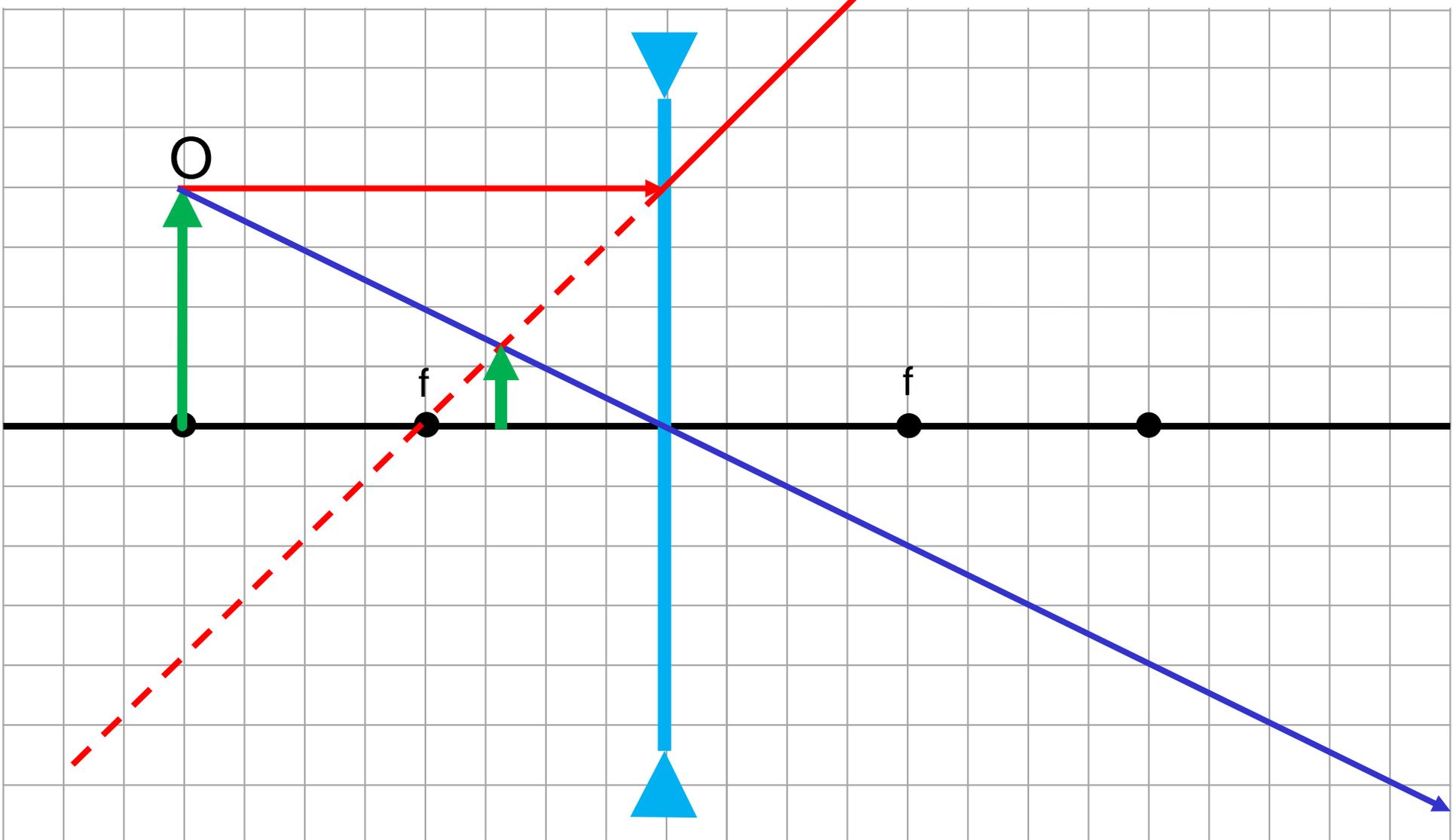


Figura 10: Objeto no anti-principal

CLASSIFICAÇÃO:

Imagem

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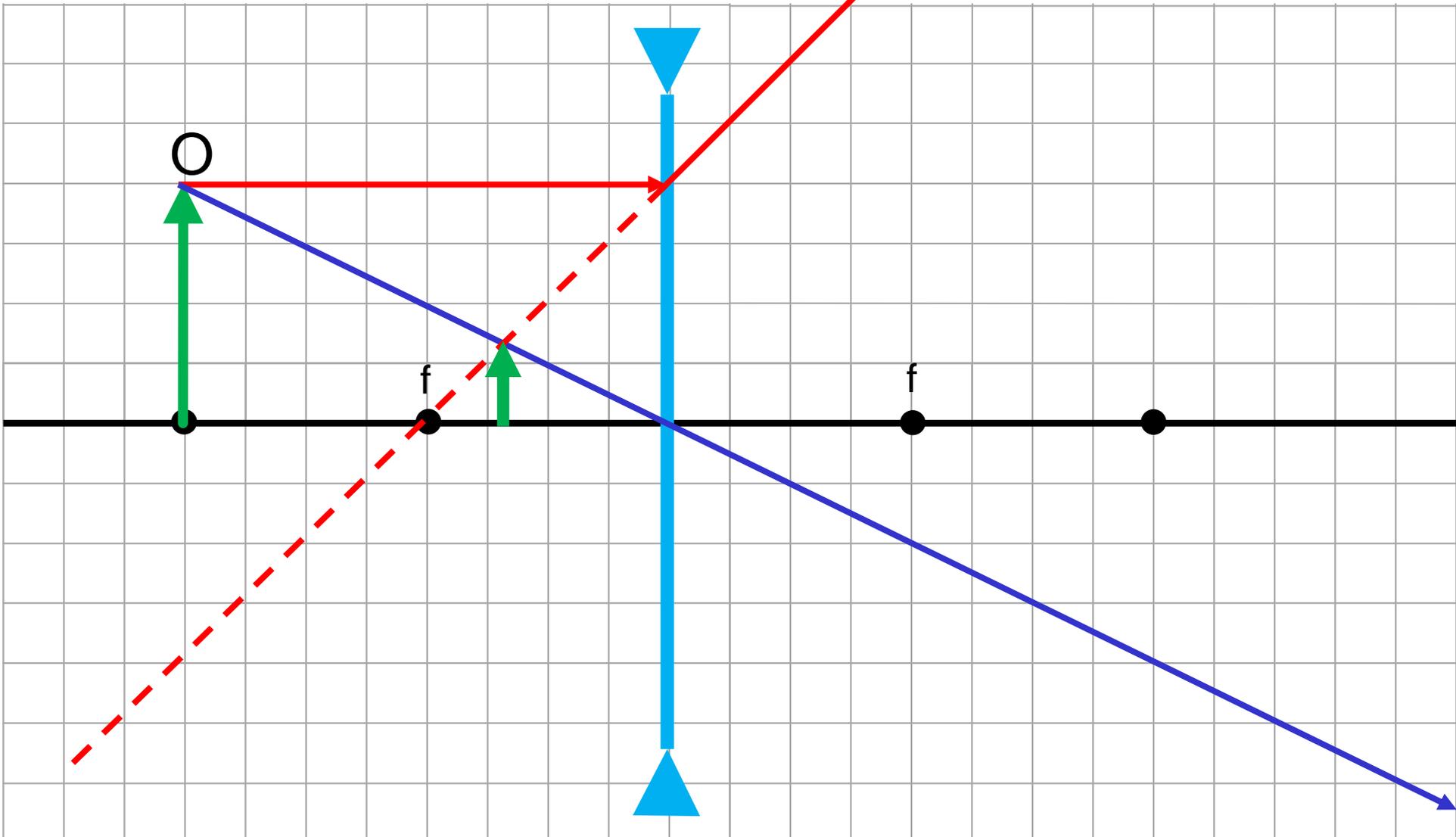


Figura 10: Objeto no anti-principal

CLASSIFICAÇÃO:

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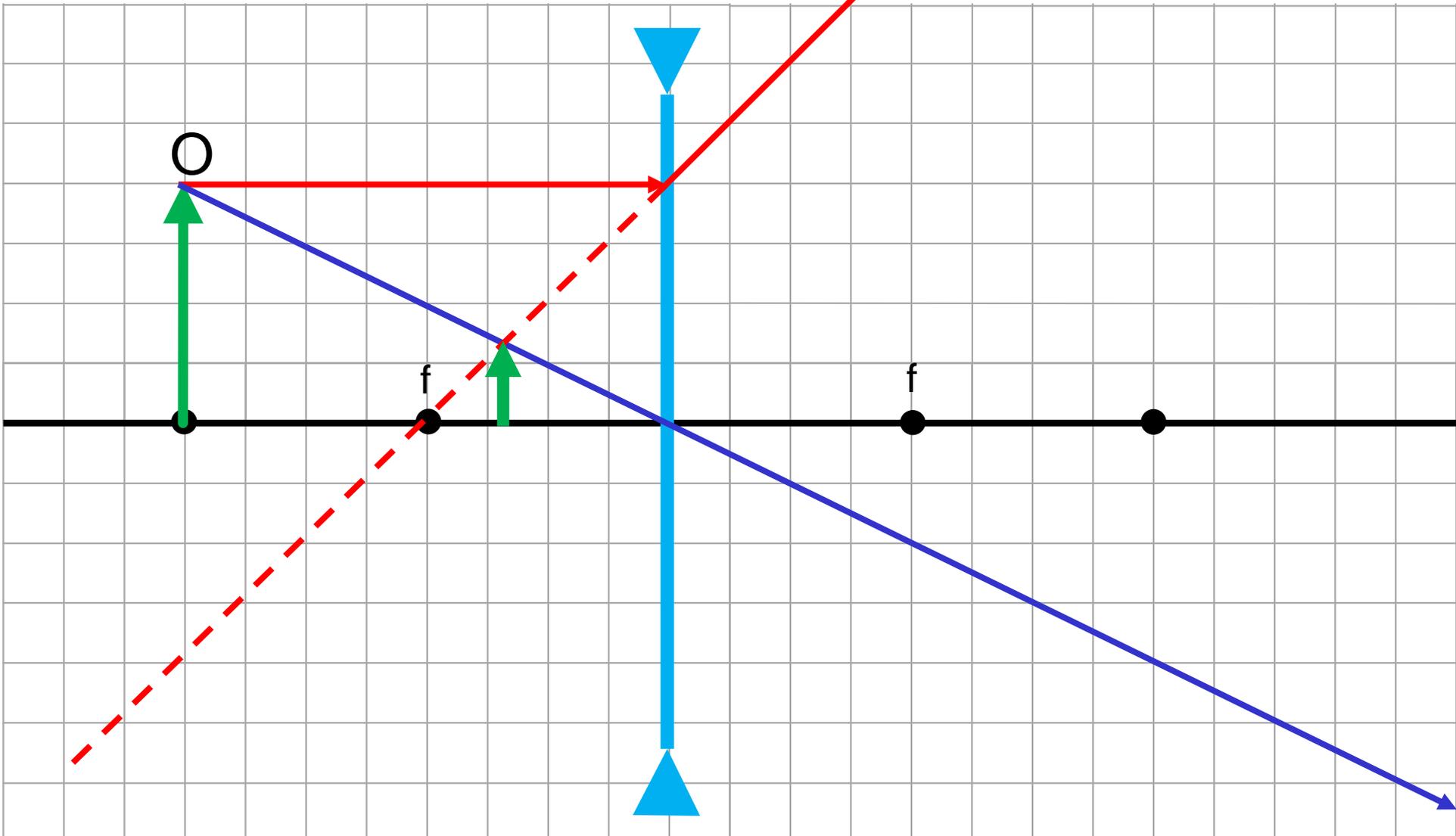


Figura 10: Objeto no anti-principal

CLASSIFICAÇÃO:

Imagem

VIRTUAL
DIREITA
MENOR

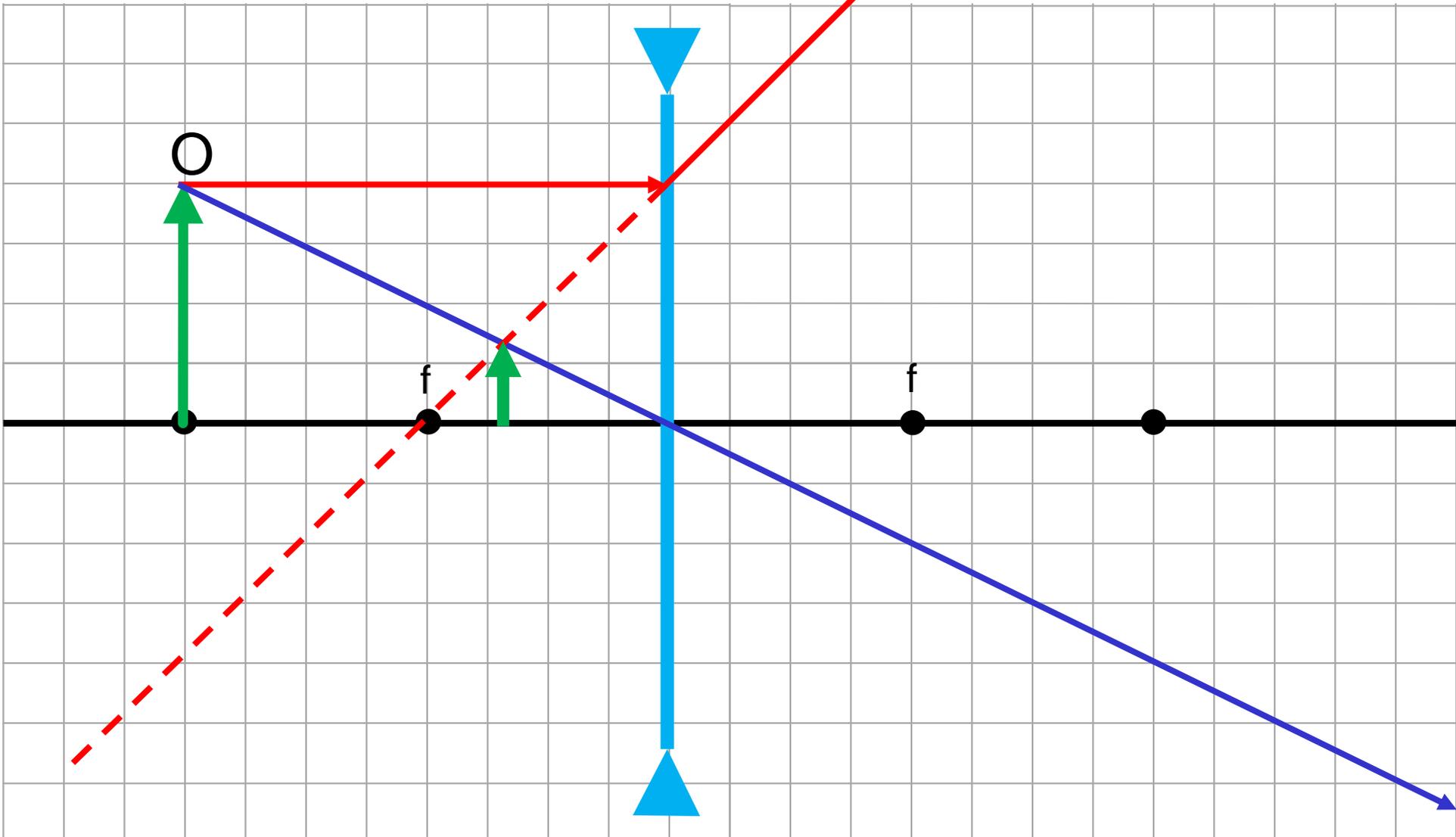
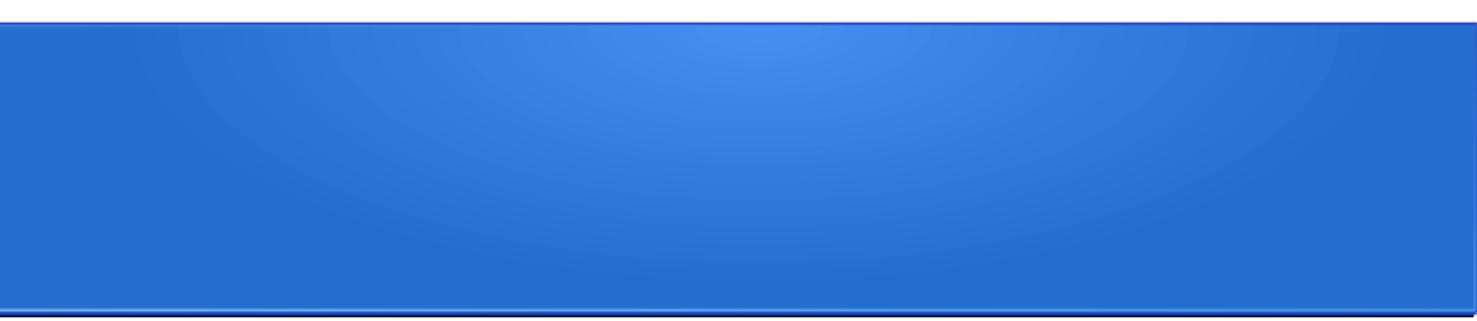


Figura 10: Objeto no anti-principal



Quinto caso

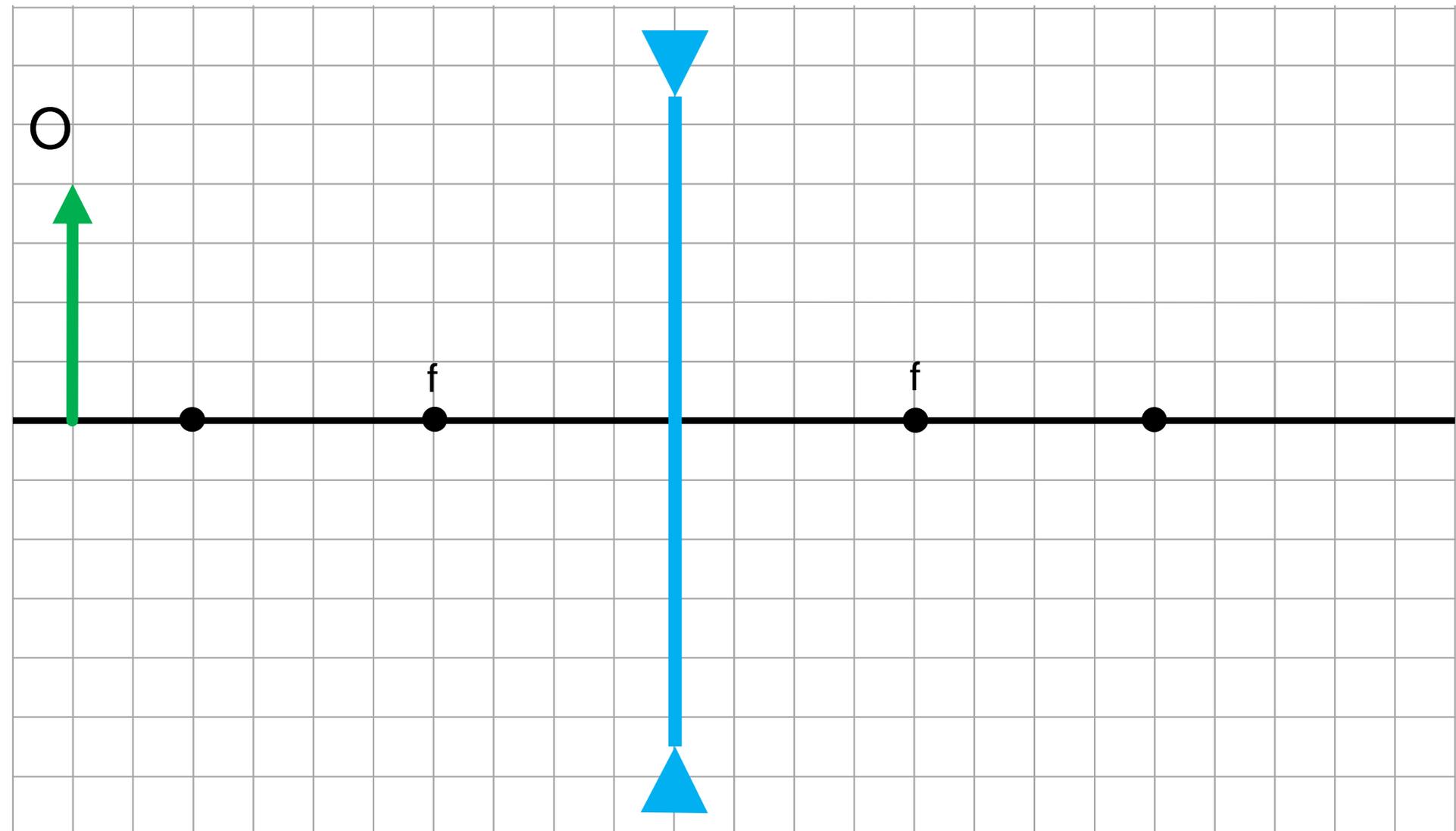


Figura 11: Objeto além do anti-principal

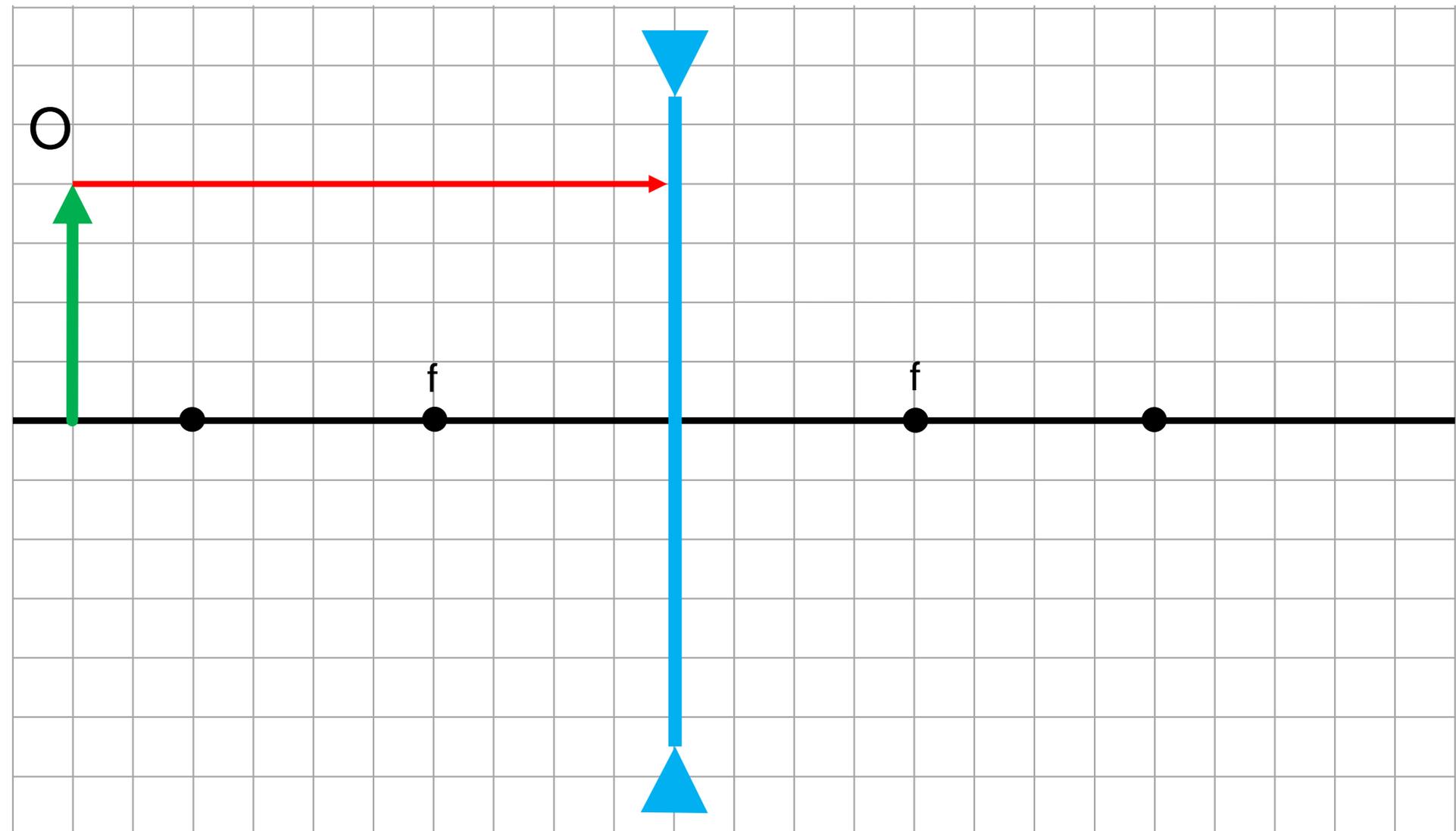


Figura 11: Objeto além do anti-principal

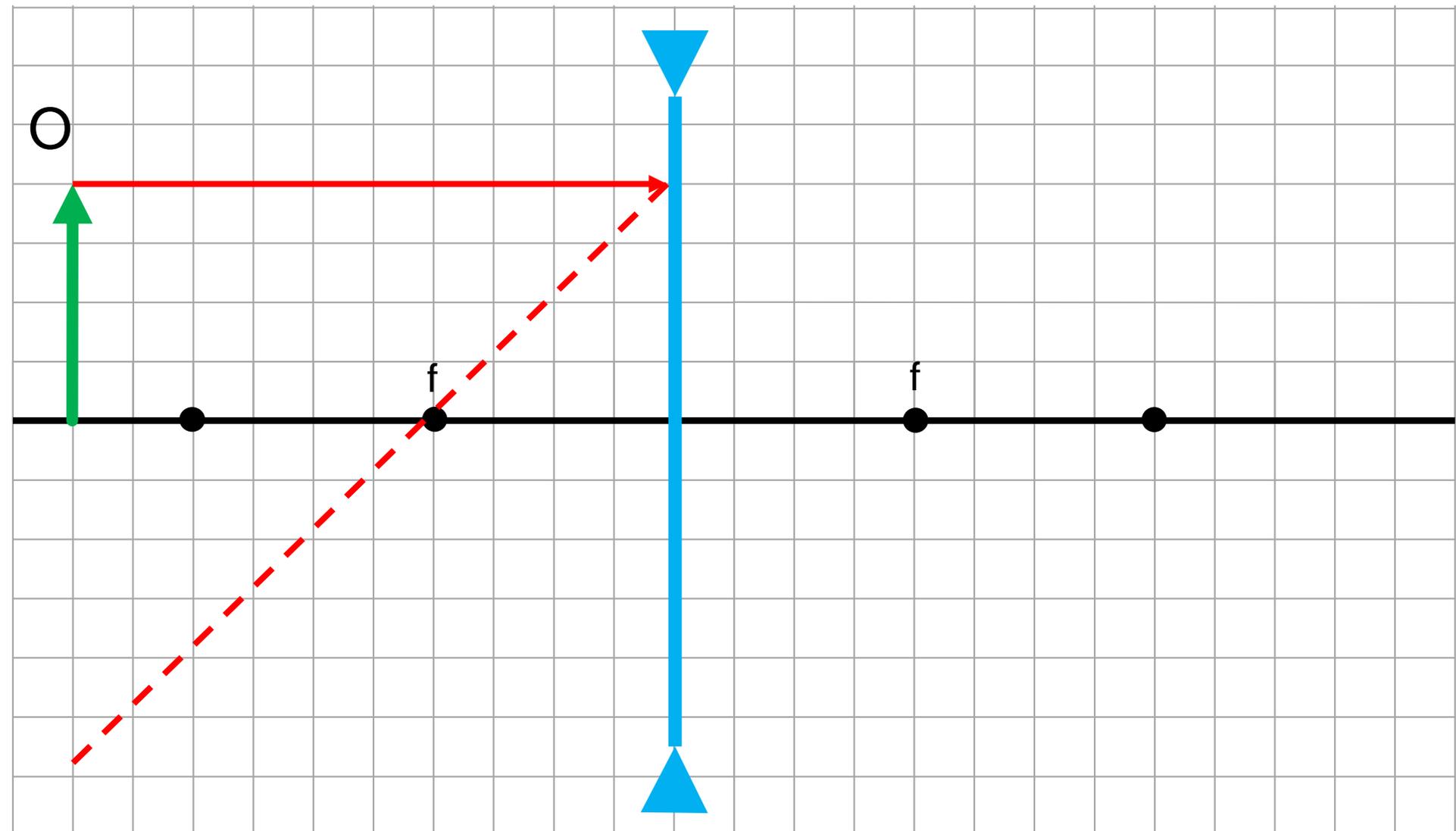


Figura 11: Objeto além do anti-principal

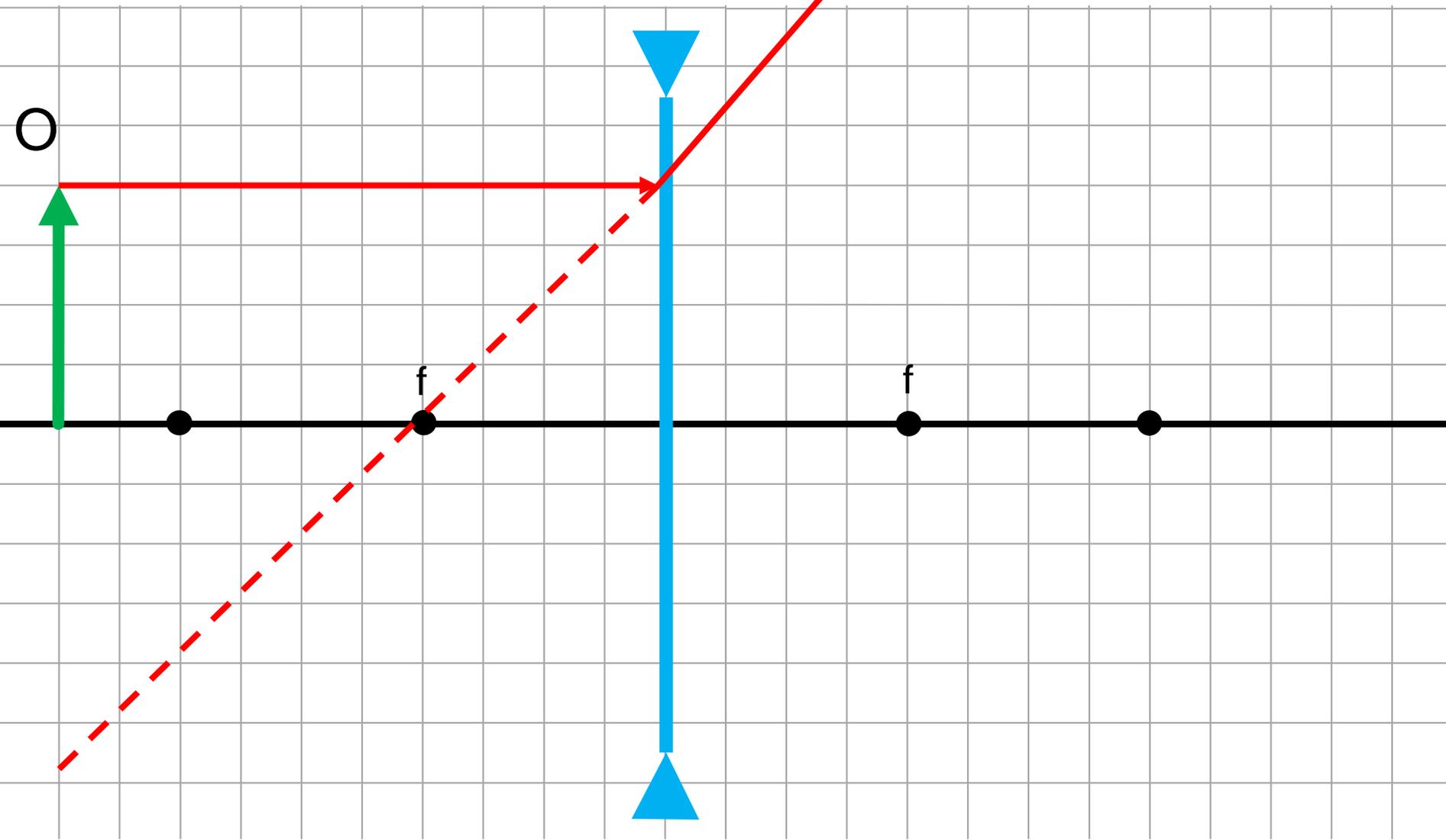


Figura 11: Objeto além do anti-principal

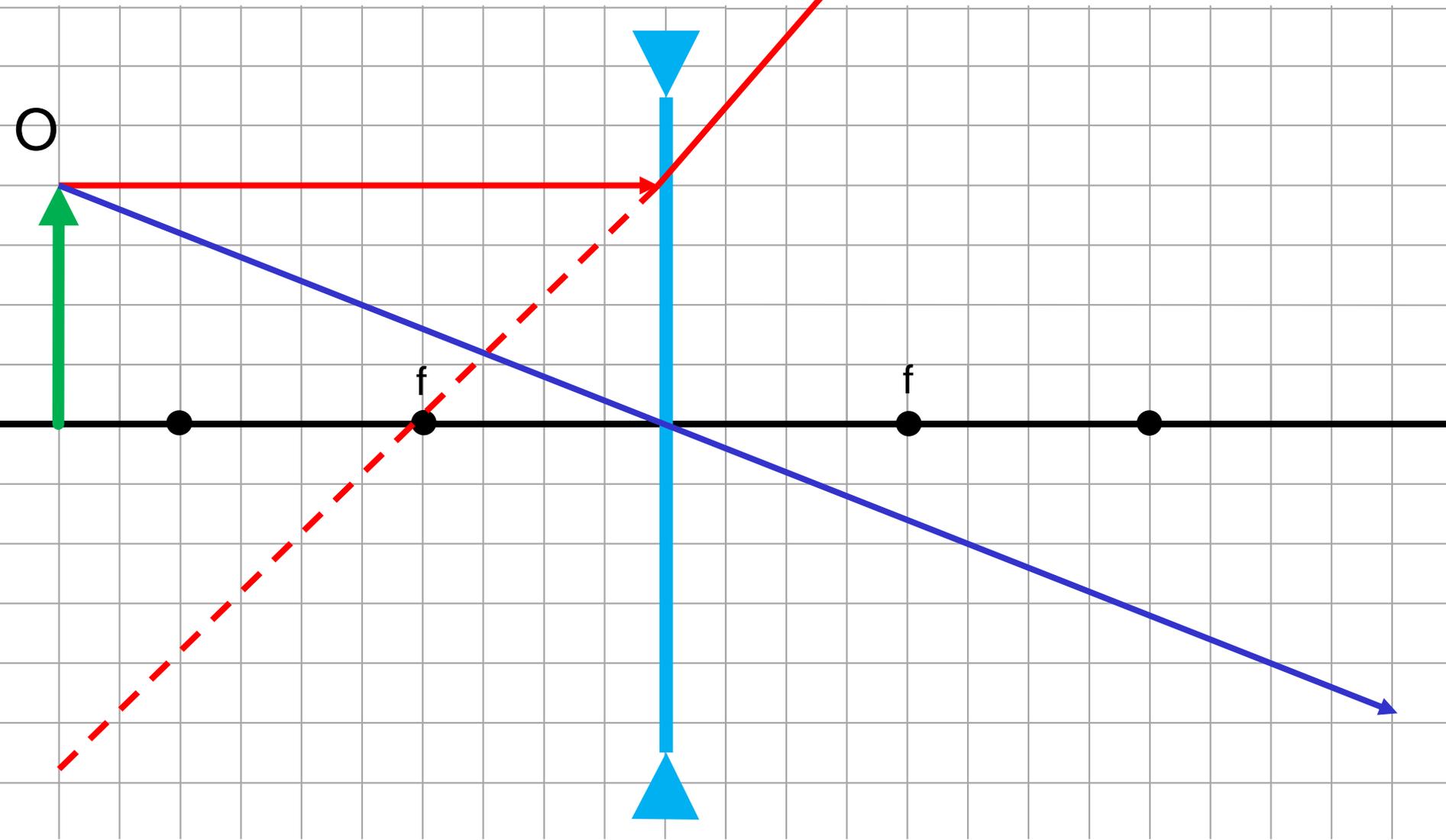


Figura 11: Objeto além do anti-principal

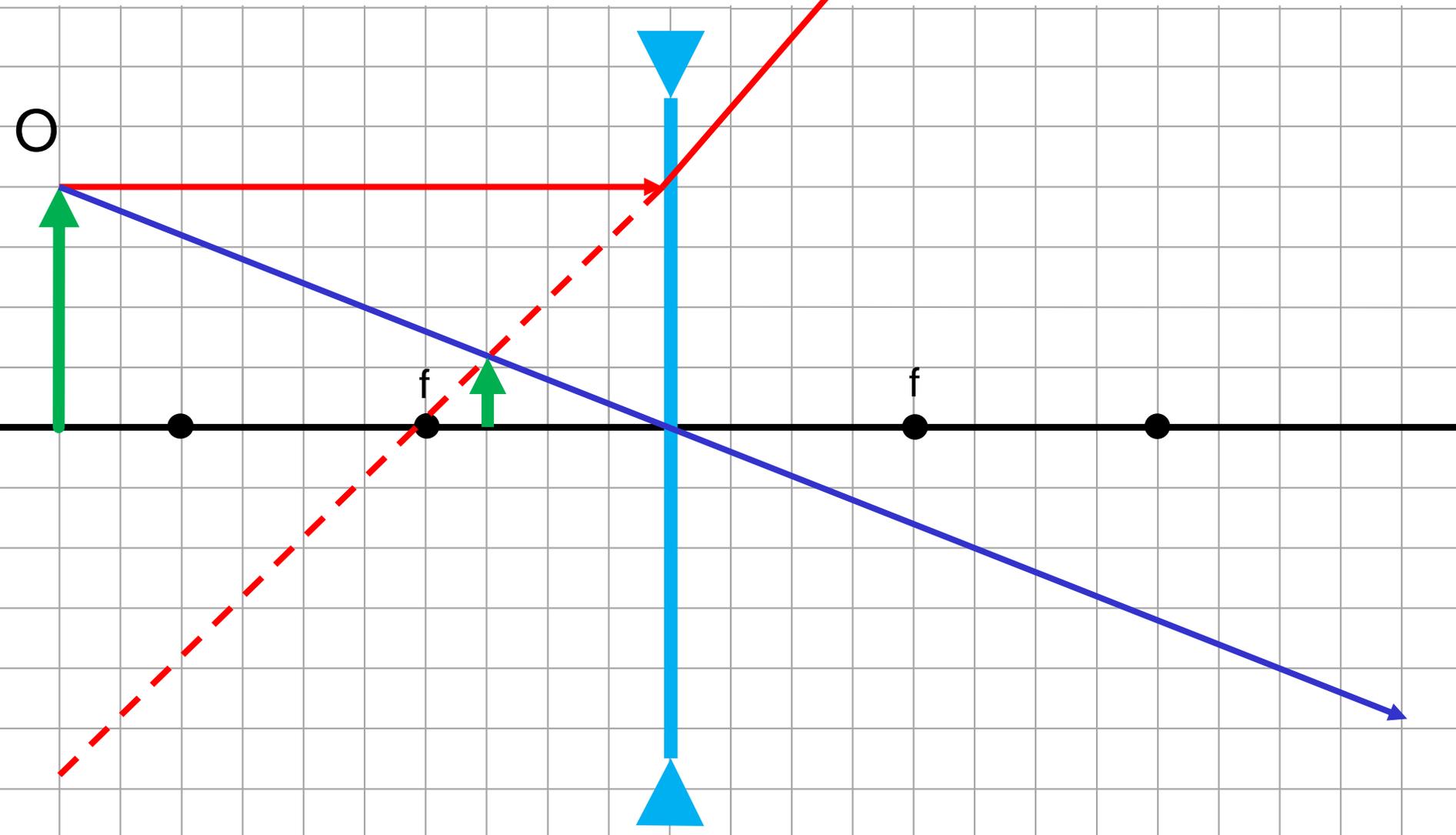


Figura 11: Objeto além do anti-principal

CLASSIFICAÇÃO:

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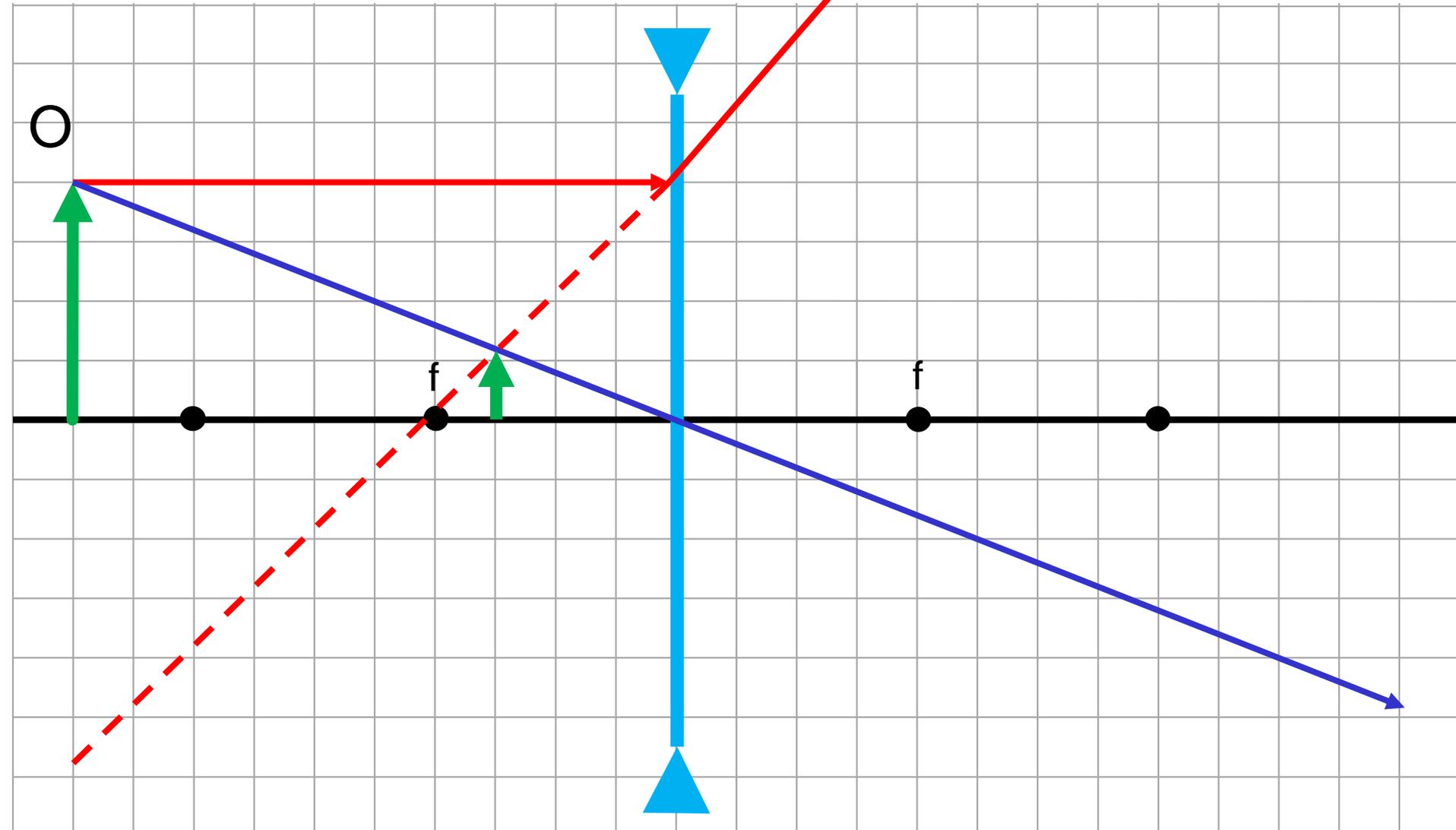


Figura 11: Objeto além do anti-principal

CLASSIFICAÇÃO:

Imagem

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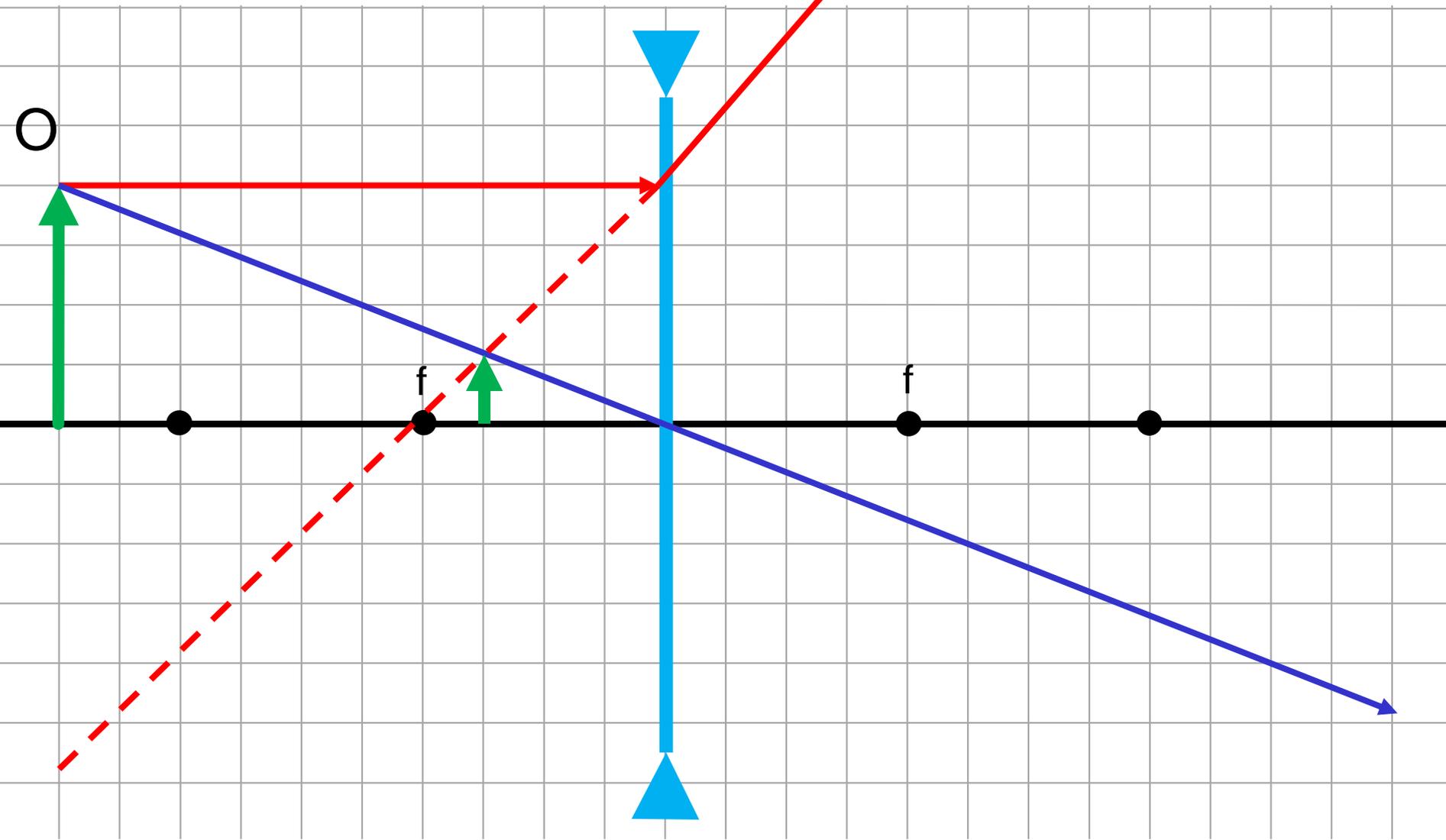


Figura 11: Objeto além do anti-principal

CLASSIFICAÇÃO:

Imagem

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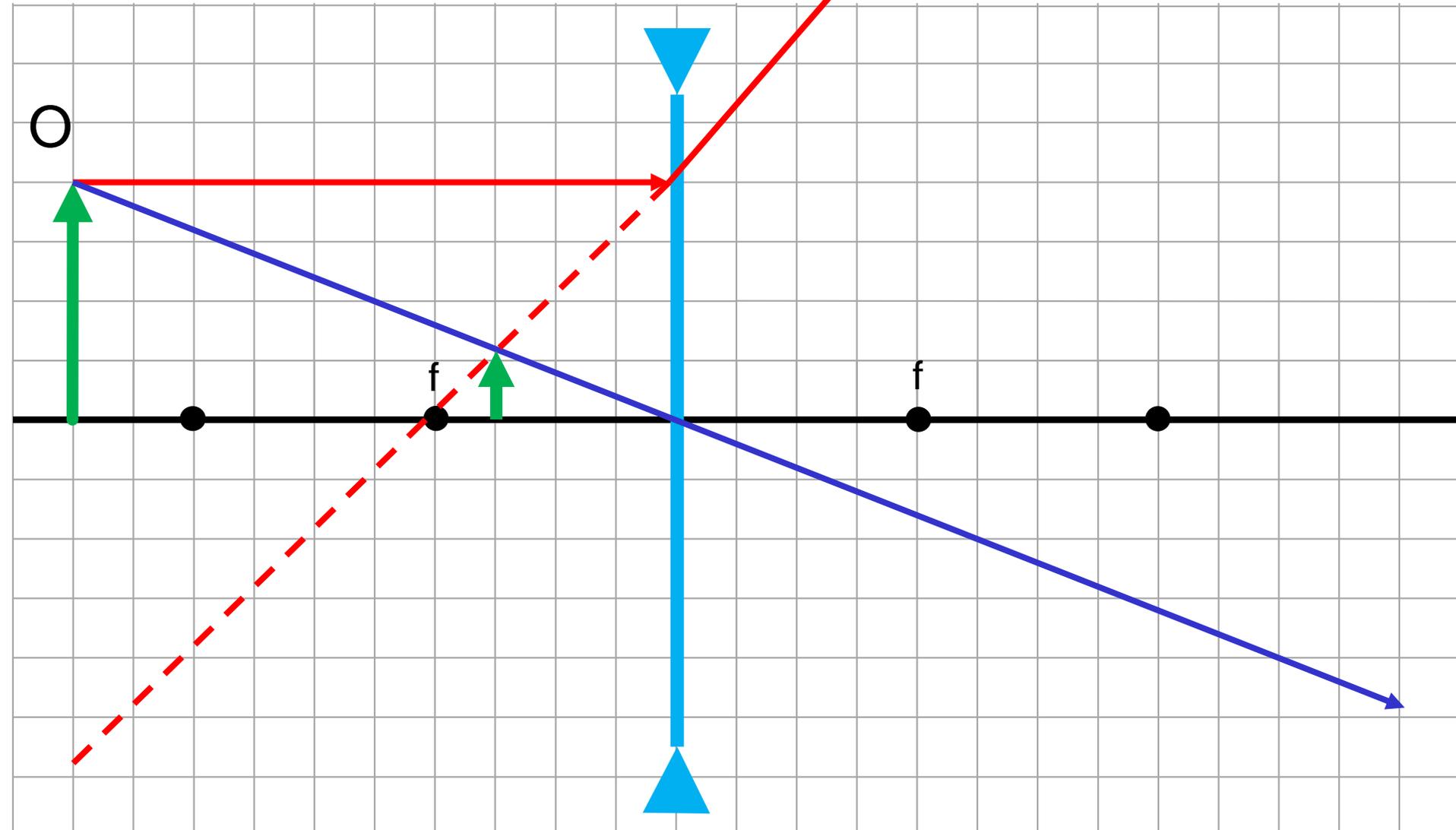
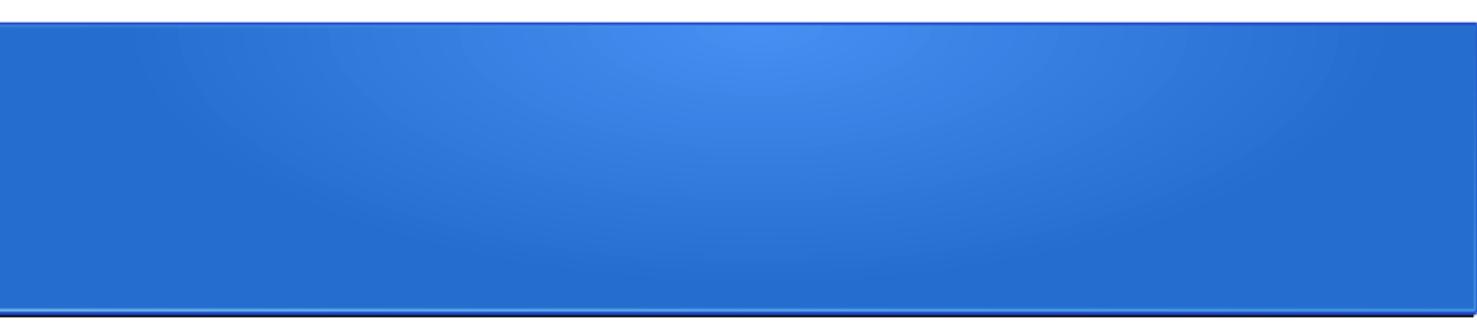


Figura 11: Objeto além do anti-principal



Sexto caso...

...e último!!!

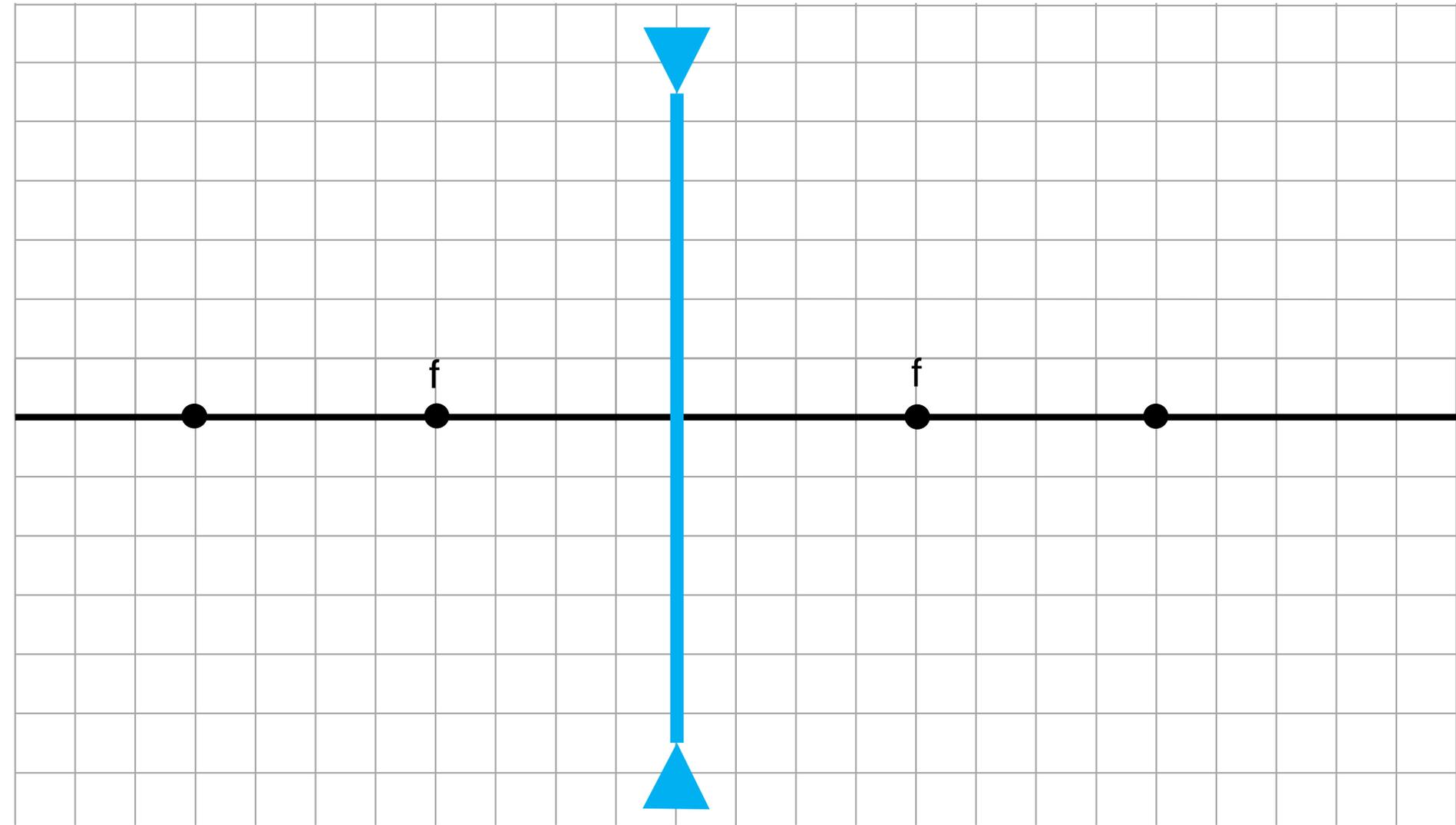


Figura 12: Objeto no “infinito”

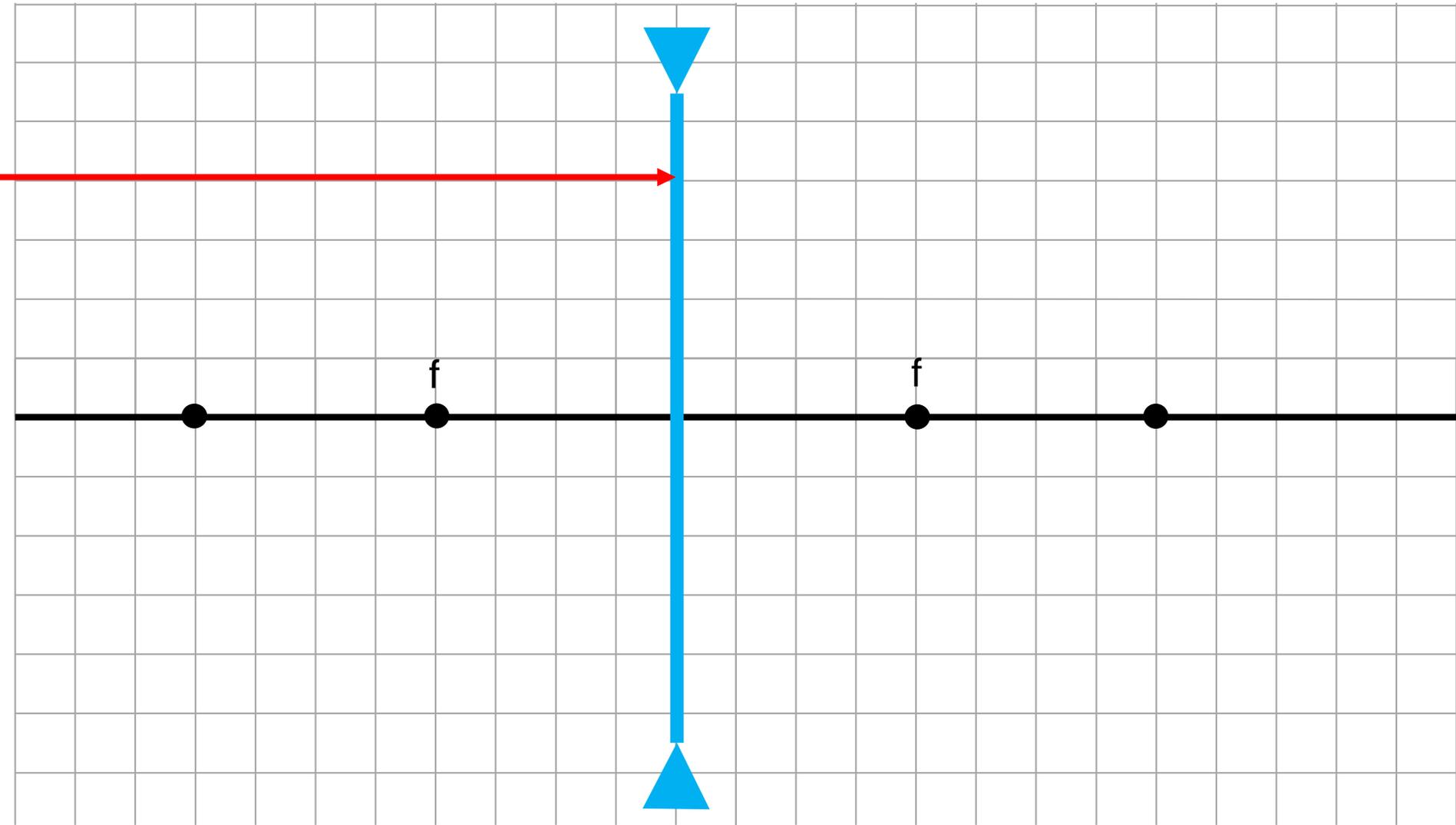


Figura 12: Objeto no “infinito”

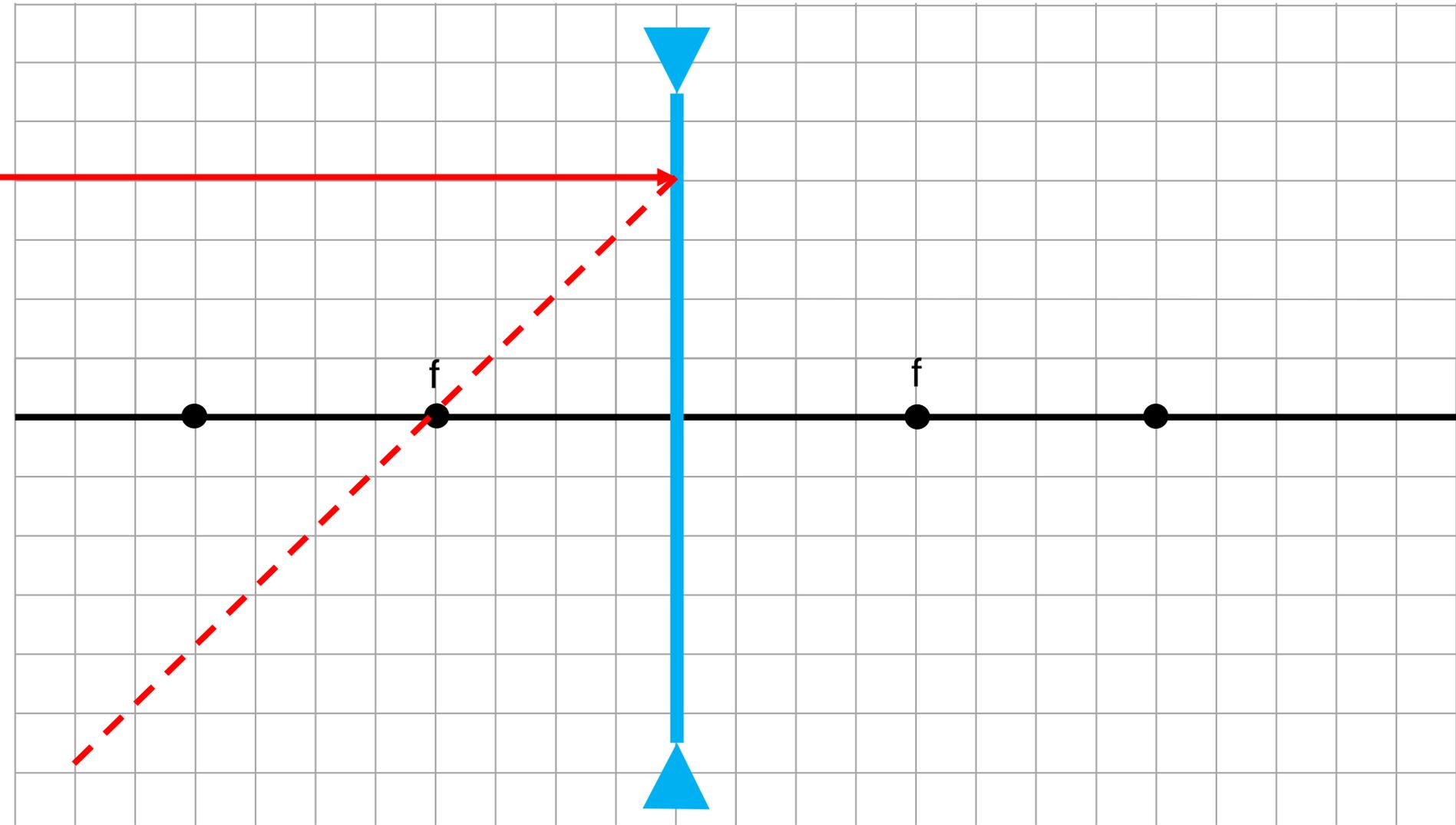


Figura 12: Objeto no “infinito”

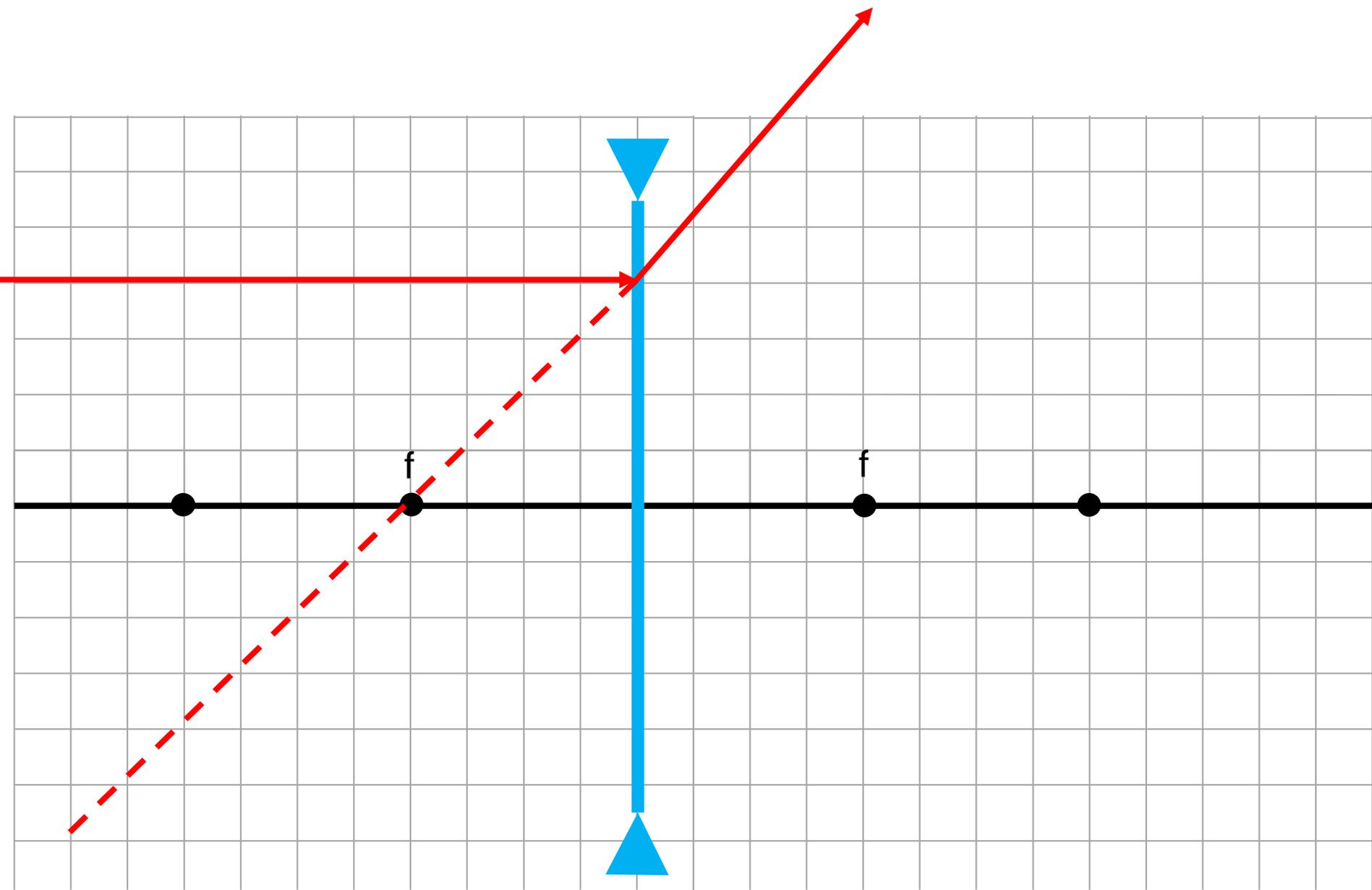


Figura 12: Objeto no “infinito”

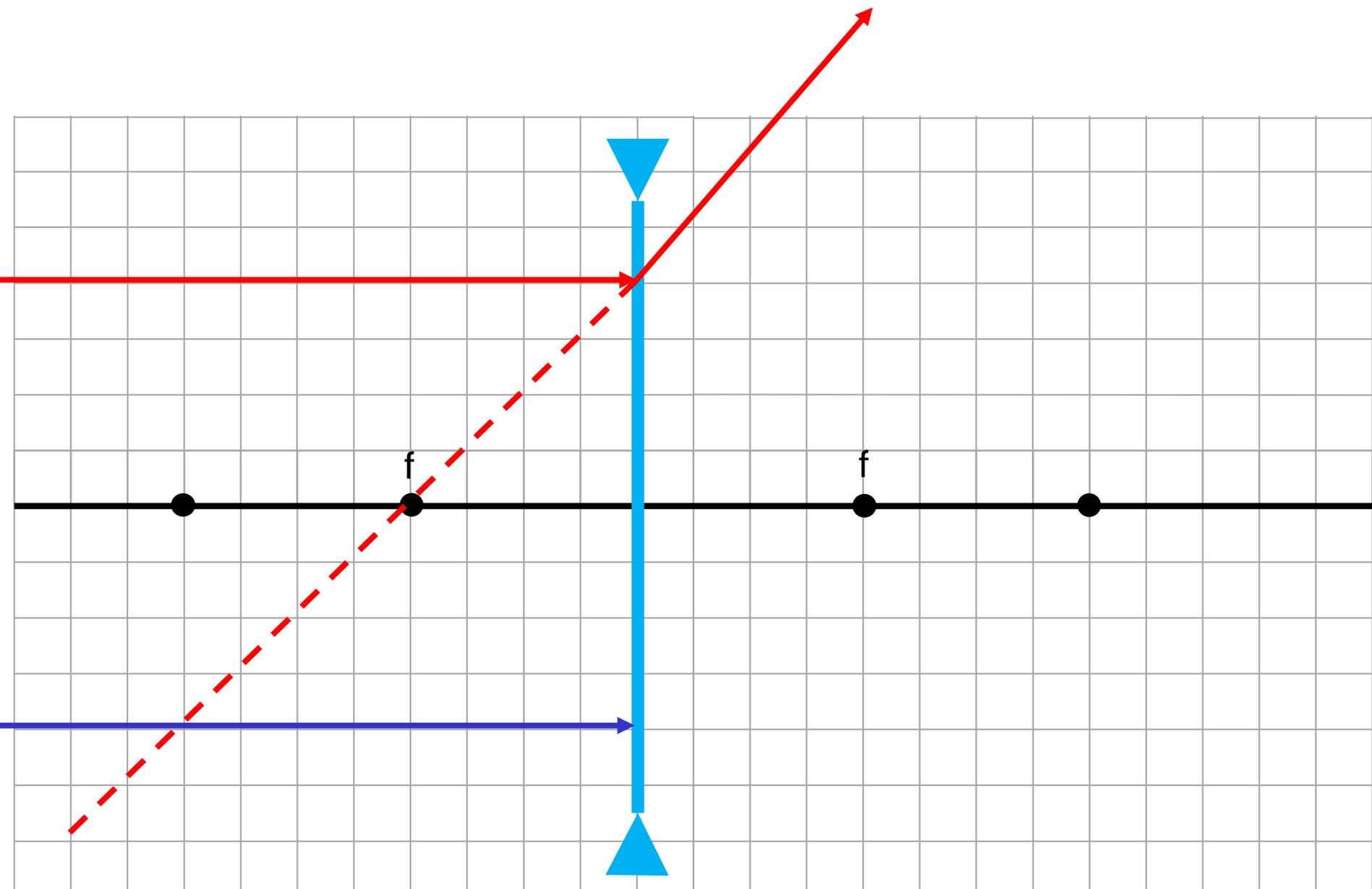


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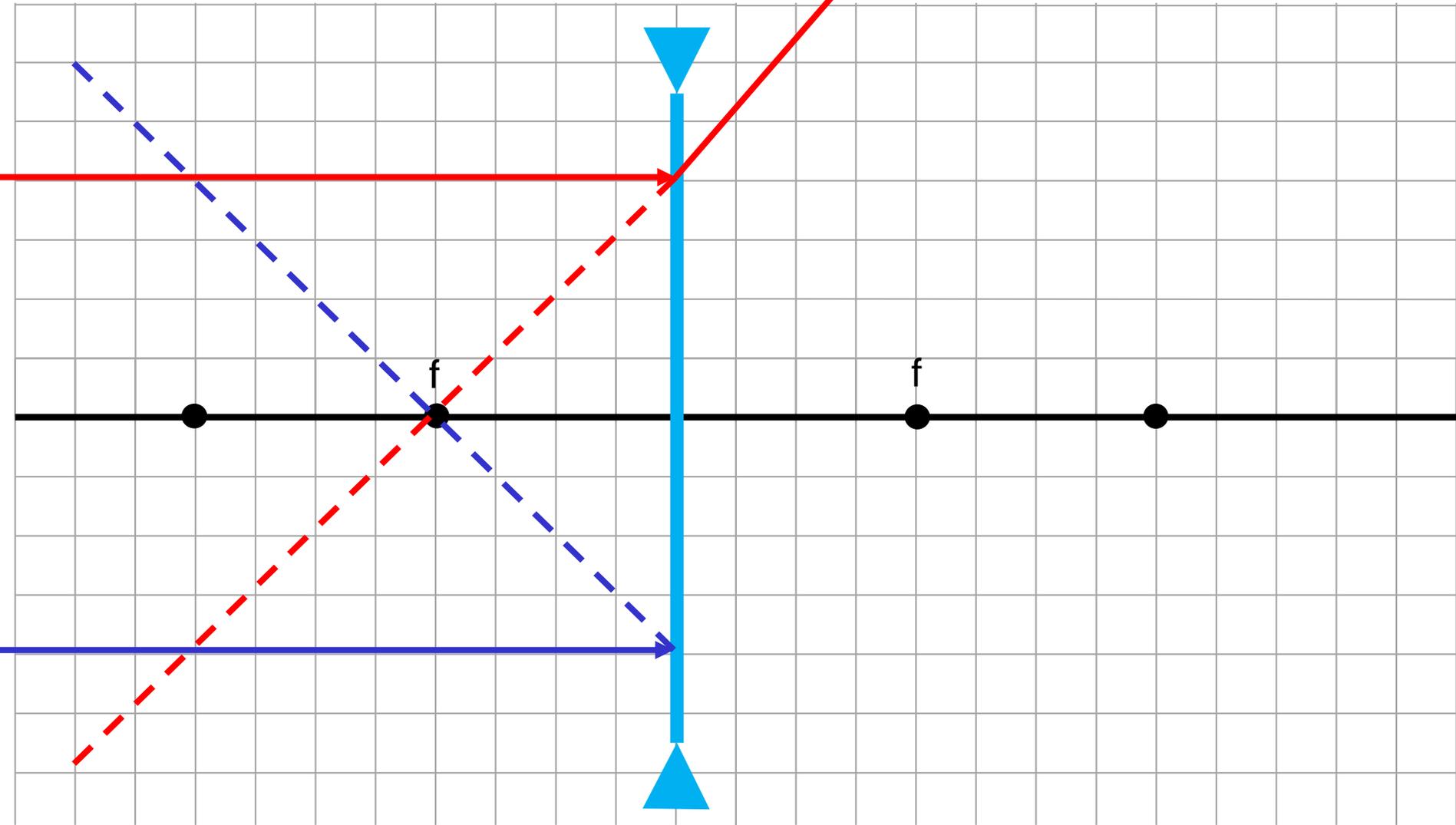


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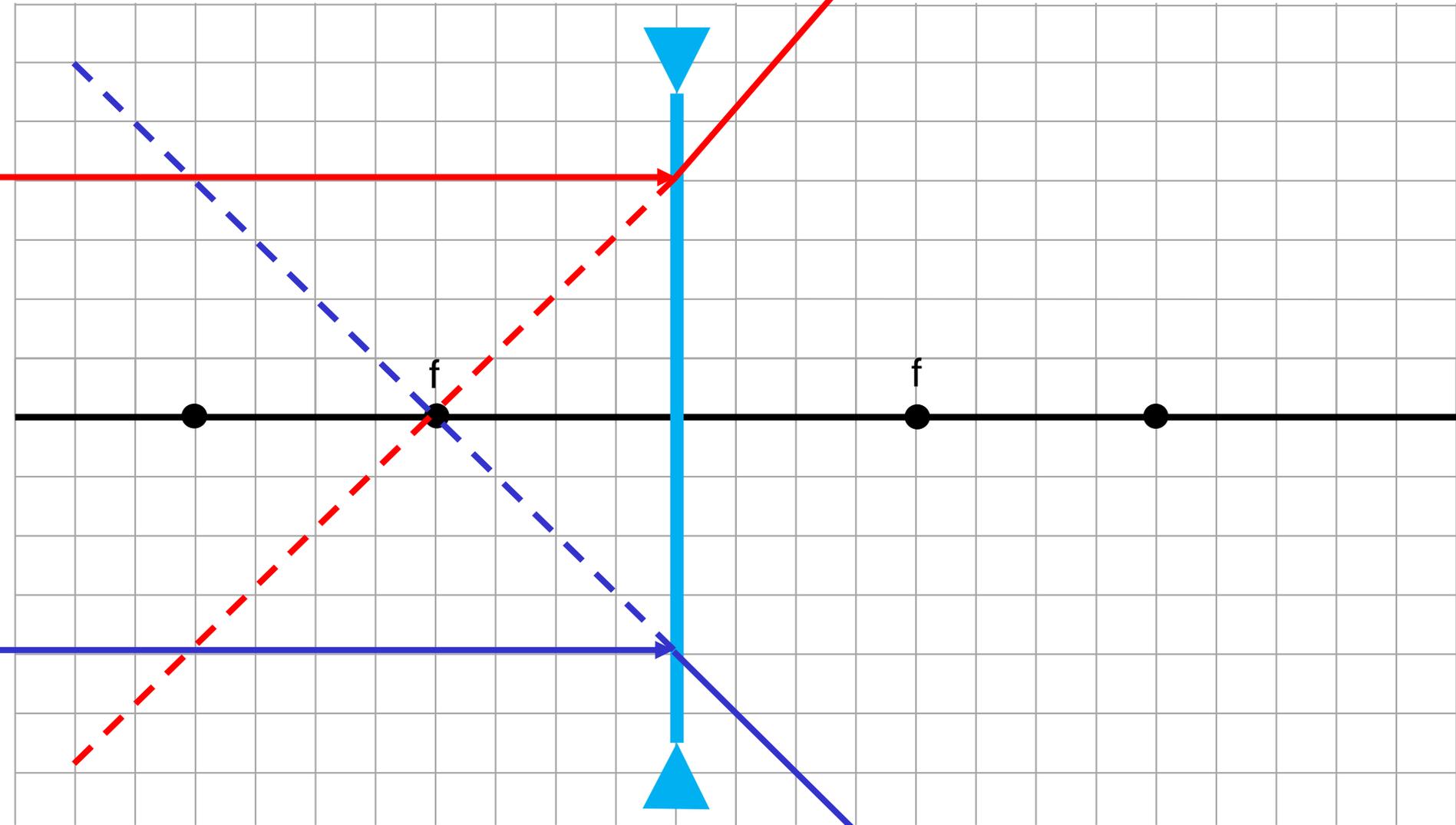


Figura 12: Objeto no "infinito"

CLASSIFICAÇÃO: Imagem

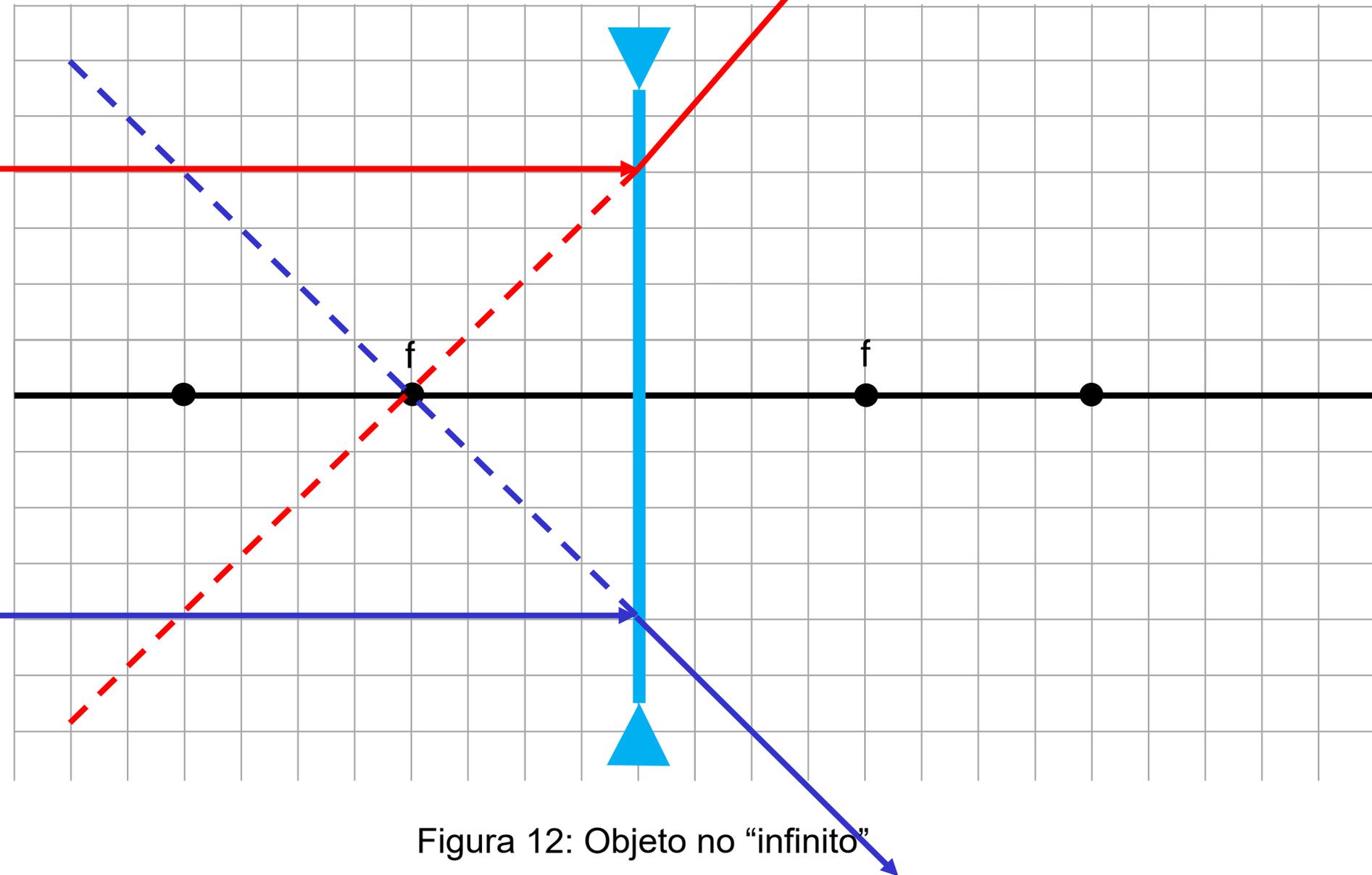


Figura 12: Objeto no "infinito"

CLASSIFICAÇÃO: Imagem PONTUAL E LOCALIZADA NO FOCO IMAGEM DALENTE

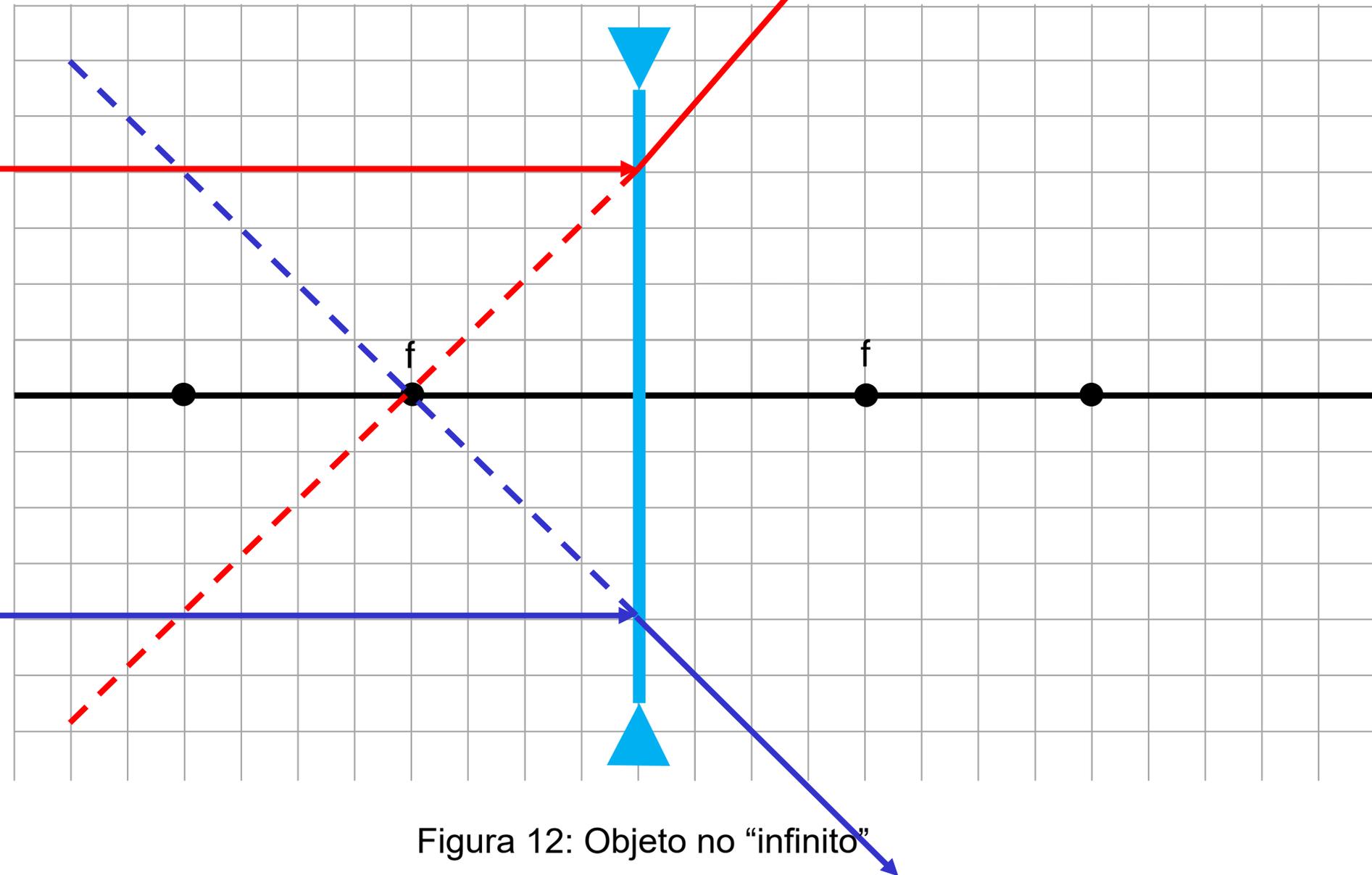


Figura 12: Objeto no "infinito"

VEJAMOS UMA ANIMAÇÃO
PARA RESUMIR O QUE
VIMOS NESTA AULA
(CLIQUE AQUI)