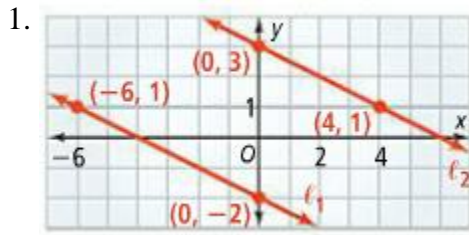
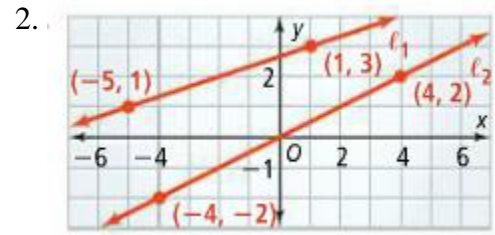


Determine a) whether the lines ℓ_1 and ℓ_2 are parallel, perpendicular or neither. b) Justify your answer.



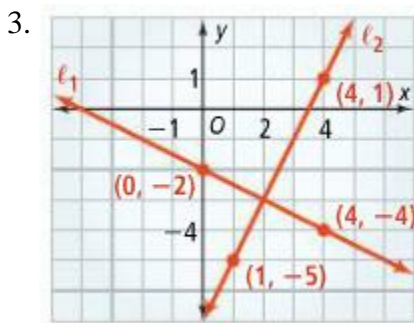
a) \parallel , \perp or neither: _____

b) Justification: _____



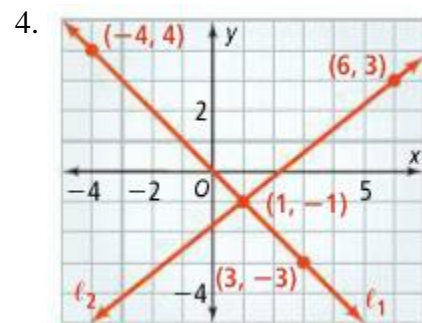
a) \parallel , \perp or neither: _____

b) Justification: _____



a) \parallel , \perp or neither: _____

b) Justification: _____



a) \parallel , \perp or neither: _____

b) Justification: _____

5. $\ell_1: y = -x + 6$

$\ell_2: x + y = 20$

a) \parallel , \perp or neither: _____

b) Justification:

6. $\ell_1: y = -x + 7$

$\ell_2: y - x = 20$

a) \parallel , \perp or neither: _____

b) Justification:

7. $\ell_1: 2x - 7y = -42$

$\ell_2: 4y = -7x - 2$

a) \parallel , \perp or neither: _____

b) Justification:

8. $\ell_1: y - 7x = 6$

$\ell_2: y + 7x = 8$

a) \parallel , \perp or neither: _____

b) Justification:

9. $\ell_1: y = 3$

$\ell_2: x = -2$

a) \parallel , \perp or neither: _____

b) Justification:

10. $\ell_1: 2x + 5y = -1$

$\ell_2: 10y = -4x - 20$

a) \parallel , \perp or neither: _____

b) Justification:

11. $\ell_1: x = 3$ a) \parallel , \perp or neither: _____

$\ell_2: x = -2$ b) Justification: _____

Use the information to write the equation of each line in slope-intercept form.

12. parallel to the line $y = -2x + 1$ and contains $(0,3)$

13. parallel to the line $y = \frac{1}{3}x$ and contains $(6,0)$

14. parallel to the line $y = \frac{1}{2}x + 2$ and contains $(-2,4)$

15. parallel to the line $y = -\frac{3}{2}x + 6$ and contains $(6, -2)$

16. perpendicular to the line $y = \frac{2}{3}x$ and contains $(0,4)$

17. perpendicular to the line $y = \frac{1}{2}x - 5$ and contains $(4,0)$

18. perpendicular to the line $y = -2x - 8$ and contains $(4,6)$