

Parallel and Perpendicular Lines

Find the equation of the line that has:

- (a) Gradient 2 and goes through (0, 5)
- (b) Gradient -3 and goes through (0, 7)
- (c) Gradient $\frac{2}{3}$ and goes through (0, 4)
- (d) Gradient -4 and goes through (0, -1)
- (e) Gradient 1 and goes through (0, -6)

(a) $y = 2x + 5$
(b) $y = -3x + 7$
(c) $y = \frac{2}{3}x + 4$
(d) $y = -4x - 1$
(e) $y = x - 6$

Find the equation of the line that is:

- (a) Parallel to the line $y = 4x + 7$ and passes through (0, 2)
- (b) Parallel to the line $y = -2x + 4$ and passes through (0, 6)
- (c) Parallel to the line $y = 3x + 1$ and passes through (0, -4)
- (d) Parallel to the line $y = x + 6$ and passes through (0, 5)
- (e) Parallel to the line $y = \frac{1}{2}x + 3$ and passes through (0, -1)

(a) $y = 4x + 2$
(b) $y = -2x + 6$
(c) $y = 3x - 4$
(d) $y = x + 5$
(e) $y = \frac{1}{2}x - 1$

Find the equation of the line that is:

- (a) Perpendicular to the line $y = 2x + 5$ and passes through (0, 7)
- (b) Perpendicular to the line $y = \frac{1}{3}x + 4$ and passes through (0, -5)
- (c) Perpendicular to the line $y = -5x + 1$ and passes through (0, 2)
- (d) Perpendicular to the line $y = -\frac{1}{4}x + 5$ and passes through (0, -4)
- (e) Perpendicular to the line $y = 3x - 1$ and passes through (0, 3)

(a) $y = -\frac{1}{2}x + 7$
(b) $y = -3x - 5$
(c) $y = \frac{1}{5}x + 2$
(d) $y = 4x - 4$
(e) $y = -\frac{1}{3}x + 3$

Match the pairs of perpendicular lines.

$x = 6$ $x + y = 5$ $y = 8x - 9$
 $2y = x + 4$ $2x + y = 9$ $y = -\frac{1}{8}x + 6$
 $5y = 2x + 15$ $y = 0.1x + 2$ $y = -2$
 $y = 33 - 10x$ $2y + 5x = 2$ $y = x + 4$

$x = 6$ and $y = -2$
 $y = 8x - 9$ and $y = -\frac{1}{8}x + 6$
 $y = 33 - 10x$ and $y = 0.1x + 2$
 $y = x + 4$ and $x + y = 5$
 $2y = x + 4$ and $2x + y = 9$
 $5y = 2x + 15$ and $2y + 5x = 2$