

10:05 | Gradient-Intercept Form

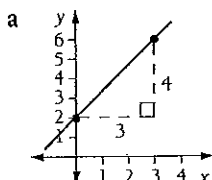
Name: _____ Class: _____

Examples

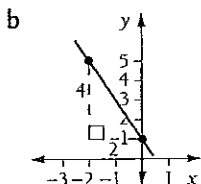


When the equation of a line is written as $y = mx + b$, then $m =$ the gradient and $b =$ the y -intercept.

1 Find the y -intercept and gradient.



y -intercept = 2
gradient = $\frac{4}{3}$



y -intercept = 1
gradient = $-\frac{4}{2}$
= -2

2 What is $y = mx + b$ when:

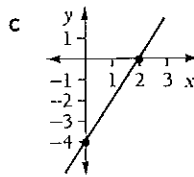
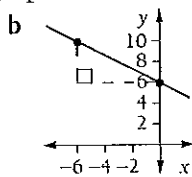
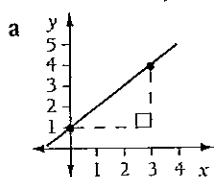
a $m = 3, b = -2?$ b $m = -1, b = 4?$
 $y = 3x - 2$ $y = -1x + 4$ or
 $y = -x + 4$

3 Find the equation of a line with:

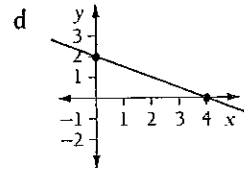
a a gradient of 4 and y -intercept of 6
 $y = 4x + 6$
b a gradient of $-\frac{3}{5}$ and y -intercept of -4
 $y = -\frac{3}{5}x - 4$

Exercise

1 For each line, use its graph to find: i the y -intercept



ii the gradient



2 What is $y = mx + b$ when:

a $m = 4, b = 3?$ b $m = -3, b = -1?$ c $m = 1, b = -2?$ d $m = -7, b = 2?$
e $m = \frac{1}{2}, b = -5?$ f $m = -\frac{3}{4}, b = 10?$ g $m = 5, b = 0?$ h $m = 6, b = \frac{1}{2}?$

3 Find the equation of a line with:

a a gradient of 2 and y -intercept of 2 b a gradient of 4 and y -intercept of -3
c a gradient of $\frac{1}{3}$ and y -intercept of -1 d a gradient of $\frac{5}{4}$ and y -intercept of 6
e a gradient of -5 and y -intercept of 4 f a gradient of -1 and y -intercept of 2
g a gradient of 8 and y -intercept of 0 h a gradient of -6 and y -intercept of 1

Fun Spot 10:05 | What are white and fluffy and live in the jungle?



Match the letters with the answers below.

$y = x - 3$: A gradient E y -intercept

$y = 2x + 6$: M gradient N y -intercept

$y = 5 - 6x$: T gradient U y -intercept

$y = -x - 4$: G gradient I y -intercept

$y = 3x$: R gradient S y -intercept

-

!

2
-3
3
-4
6
-1
5
-3
5
-6
1
6
0

10:05 Gradient-Intercept Form

1 a i 1 ii 1

2 a $y = 4x + 3$

e $y = \frac{1}{2}x - 5$

3 a $y = 2x + 2$

e $y = -5x + 4$

b i 6 ii $-\frac{2}{3}$

b $y = -3x - 1$

f $y = -\frac{3}{4}x + 10$

b $y = 4x - 3$

f $y = -x + 2$

c i -4 ii 2

c $y = x - 2$

g $y = 5x$

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

g $y = 8x$

d i 2 ii $-\frac{1}{2}$

d $y = -7x + 2$

h $y = 6x + \frac{1}{2}$

d $y = \frac{5}{4}x + 6$

h $y = -6x + 1$