Aug 29

Bellwork

$\phi(x)$ is a smooth, continuous function.

$$\phi(0.12) = 0.5478$$

and $\phi(0.13) = 0.5517$

Find an approximation for $\phi(0.123)$.

NORMAL DISTRIBUTION TABLE

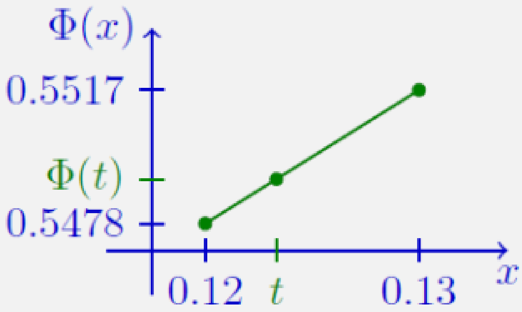
Entries represent the area under the standardized normal distribution from $-\infty$ to z, i.e., $\Phi(z) = \Pr(Z \leq z)$ is the cdf. The value of z to the first decimal is given in the left column. The second decimal place is given in the top row.

z	0.00	0.01	0.02	0.03	0.04	$\cdots$
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	
$\vdots$			$\vdots$			

$\Phi\,(0.12) = 0.5478$

Linear Interpolation

In between values, we can linearly interpolate (we can also round and then choose the nearest answer choice):
From the table, $\Phi(0.12) = 0.5478$ and $\Phi(0.13) = 0.5517$.



name	form	Notes
Standard form	$ax+by=c$	• useful for systems of equations • use "cover-up" method for graphing
function form a.k.a. Slope-intercept form	$y=mx+b$	• you can see the slope, m • you can see the y-intercept, b
point-slope form	$y-y_1=m(x-x_1)$	• useful when you know a point (x_1,y_1) and the slope. • Also good if you know 2 pts
intercept form	$\frac{x}{a}+\frac{y}{b}=1$	• x-intercept at "a" • y-intercept at "b"

Warm-ups

Write the equations of the lines described below...

(1) The line through (8,3) and (2,-1).

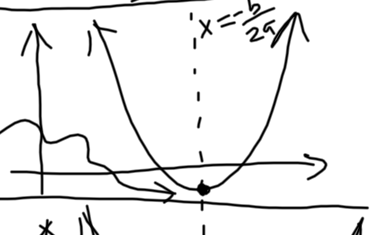
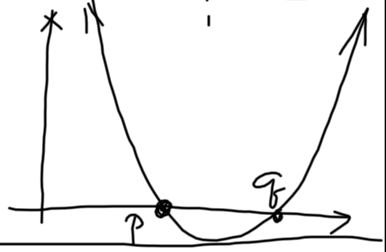
(2) The perpendicular bisector of the segment joining (0,3) and (-4,5).

(3) The line through the origin perpendicular to the line $x-3y=9$.

(4) The line through (-2,4) parallel to the line thru (1,1) and (5,7).

Sep 15-7:03 AM

forms of quadratics

name	form	interesting stuff	graph
Standard form	$f(x)=ax^2+bx+c$	axis of symmetry $x=-\frac{b}{2a}$ vertex $\left(-b/2a, f\left(\frac{-b}{2a}\right)\right)$	
intercept form "aka" factored	$f(x)=$ $a(x-p)(x-q)$	x-int at $(p,0)$; $(q,0)$ $x=\frac{p+q}{2}$ = axis of symmetry	
vertex form	$f(x)=$ $a(x-h)^2+k$	vertex (h,k) axis of symmetry $x=h$