1. Solution to review for exam 1

(1)
(a) 2

(b) $-\frac{a}{f}$

(c) does not exists ($-\infty$)

(d) does not exists

(2) 3

(3) $5(\frac{\ln(3)}{\ln(2)})$ hours

(4) vertical asymptote for f: $x = -\frac{d}{c}$
Domain for f: $(-\frac{d}{c}, \infty)$

$f^{-1}(x) = \frac{1}{c}(e^{\frac{x-a}{b}} - d)$
horizontal asymptote for f^{-1}: $y = -\frac{d}{c}$

(5) $\frac{g}{\sqrt{g^2+f^2}}$

(6) (a) $-\frac{2}{3}$

(b) $-\frac{1}{2}$

(c) $y = -\frac{1}{2}x + 2$

(7) 32

(9) (a) For example $(0, \frac{\pi}{2})$

(b) For example $(0, \pi)$

(10) $f^{-1}(500) = 95$ so $f^{-1}(500)$ tells you that you are producing 95 articles when the cost is 500.

(11) $-30(\frac{\ln(2)}{\ln(0.6)})$ hours

(12) continuous

(13) (a) 4

(b) 3

(14) linear, $f(x) = 5000 - 600x$, where f is the value of the car after x years.