Exam 2

1. True, True
   False, True 2 outputs

2. $g(c)$
   g determines the radius of the circle given its circumference
   $g(19)$
   $g(a) = 19$

4. graph of f
   $(4,5) \rightarrow$ inverse
   $f^{-1}(4)$ regular

5. $h(g(128)) \rightarrow$ area $\rightarrow$ perimeter $= 128$
   $f(s(6.52)) \rightarrow$ perimeter $\rightarrow$ area $= 6.52$

6. 1000 meter race
   $f(t) \rightarrow$ tortoise's distance
   $t \rightarrow$ seconds
   $g(t) \rightarrow$ hare's distance from the finish line

7. $(6,4)$
   $-6 - 7(4) \rightarrow -6 - 28 \rightarrow$

8. f $\rightarrow$ 35 off
   g $\rightarrow$ 40% off 450

9. horizontal intercepts $\rightarrow$ roots

10. $f(x) = -3(x-7)^2 + 4$

$g(x) = \frac{\sqrt{x+4}}{x-8}$

domain: $(-\infty, \infty)$
range: $(-\infty, 4]$

domain: $(-\infty, 8] \cup [8, \infty)$

12. $3x - 5 \rightarrow 3(\sqrt{x+4}) - 5$
    $\sqrt{x+4} \rightarrow \sqrt{(3x-5)+4}$
    $\sqrt{x+4} \rightarrow \sqrt{\frac{5}{x}+4}$

14. h gives the cost of car b t years since 2005

15. 42 gallon
    drained 3 gallons per minute

range?

function C = varying cost of both of their apples
n = pounds for both

$f(n) = 0.4n + 7$

$x = 0.4y + 7$

$\frac{x-7}{0.4} = \frac{0.4y}{0.4} \rightarrow y = \frac{x-7}{0.4}$

17. $x = 4y + 9$

$x - 9 = 4y$

$\frac{x-9}{4} = y$

$x = \frac{y+2}{4} \rightarrow 4x = y + 2$

$4x - 2 = y$

$x = \frac{y}{7} + 6$

$x - 6 = \frac{y}{7} \rightarrow 7(x-6)$

$x = 5y + 20$

$\frac{x-20}{5} = \frac{5y}{5}$

$\frac{x-20}{5} = y$

$x = 3y + 9 \rightarrow \frac{x-9}{3} = \frac{3y}{3}$

18. Open top box

$(17 - 2x)$ $(5 - 2x)$

$17 - 2x = 0$ $5 - 2x = 0$

$\frac{-2x}{-2} = \frac{-17}{-2}$ $\frac{-2x}{-2} = \frac{-5}{-2}$

$x = 17/2$ $x = 5/2$

8.5 2.5

19. $0.3(5)^2 + 2(5)$

$0.3(25) + 10$

$7.5 + 10 = 17.5$

$0.3(2)^2 + 2(2)$

$0.3(4) + 4$

$1.2 + 4 \rightarrow 5.2$

12.3

20. 12mm long

melts 1.2 mm per minute

$1.2 \cdot 10 \rightarrow 12$

$x = 12 - 1.2t$

$\frac{x-12}{-1.2} = \frac{-1.2t}{-1.2}$

$7.4 \rightarrow 8.88 \rightarrow 3.12$