MAT 1050 Final Exam Answer Key
Winter 2015

1. $(1-\pi)2^x + 3x^2 + 8^x - 3x$

2. $-\dfrac{9ac}{b^2}$

3. $28 - 10\sqrt{3}$

4. $\dfrac{3}{2}$

5. $(-\infty, \infty)$

6. $\left\{-\frac{1}{2}\right\}$

7. Joe saw 60 robins, 20 cardinals and 35 blue jays.

8. $a = \dfrac{bc}{3b-2c}$

9. $[-6, \infty)$

10. a) $f(\frac{1}{2}) = -18$ b) $f(-2) = -8$

11. $-2x + 3 - h$

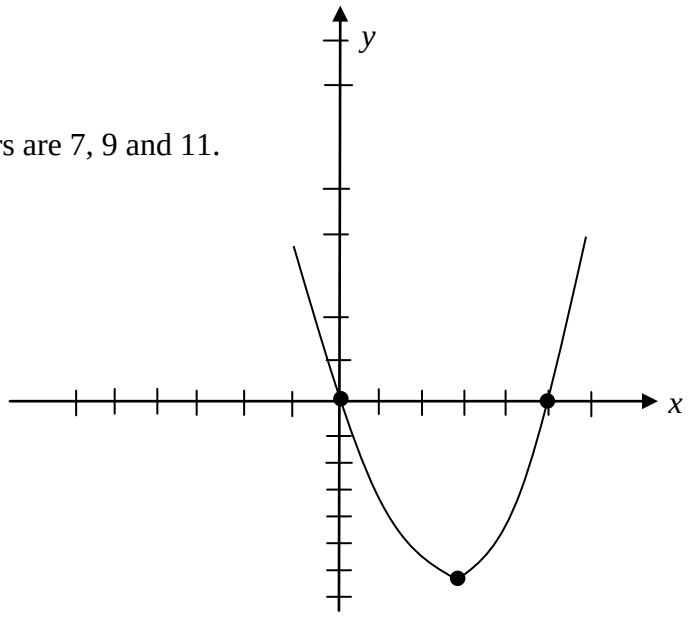
12. $y = -\dfrac{5}{3}x + 4$

13. $x = 5$

14. The three consecutive odd numbers are 7, 9 and 11.

15. $\left\{0, \dfrac{1}{4} \pm \dfrac{\sqrt{23}}{4}i\right\}$

16. Vertex $(\frac{5}{2}, -\frac{25}{4})$
Opens up
Intercepts (0,0) (5,0)



17. $\dfrac{x+5}{2x-5}$

18. $\{4\}$

19. $(-\infty,-3]\cup[0,3]$

20. $(-2,2)$

21. a) Domain $(-2,1)\cup(1,\infty)$
b) Range $(-\infty,3)$
c) $f(0)=0$
d) $f(0)=0,\ f(2)=0,\ f(4)=0$

22. $\{3,4\}$

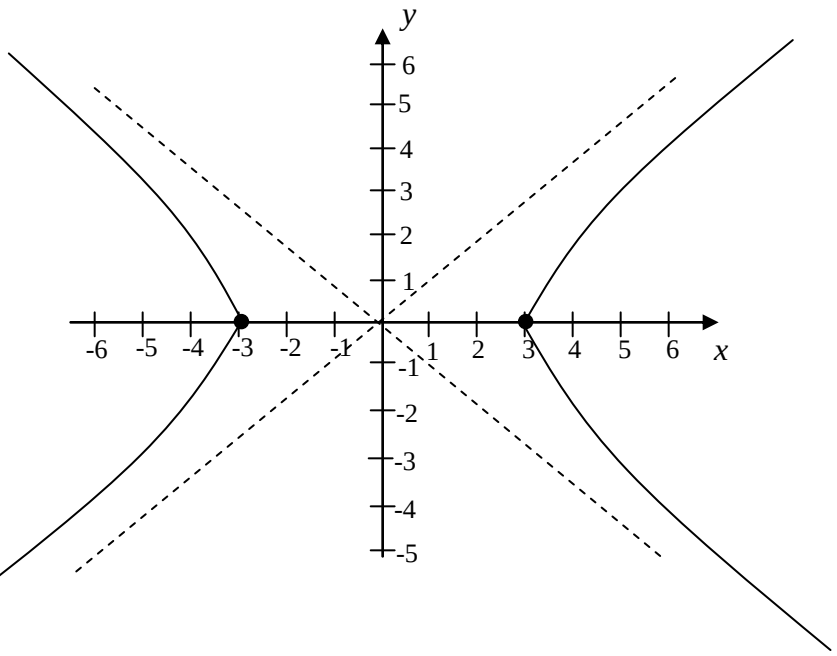
23. a) $\log_{27}\left(\frac{1}{3}\right)=-\frac{1}{3}$ b) $\log_2(16)=4$ c) $\log(.01)=-2$

24. a) 4.36 b) 2.81 c) -0.18

25. $\{2\}$

26. Hyperbola, center $(0,0)$

Points on the hyperbola:
$(3,0),(-3,0)$



27. $\log_2\left(\frac{1}{3}\right)<\sin(\pi)<\cos(0)<\sqrt{3}$

28. a) $180\pi^\circ$ b) $-\frac{\pi}{60}\,rad$

29. a) $\frac{12}{5}$ b) $\frac{12}{13}$

30. Marvin's speed in still water is 9 mph.