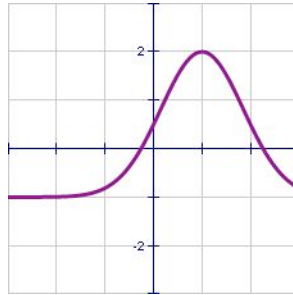Exam 1
Math 110 Sections:
Instructors:
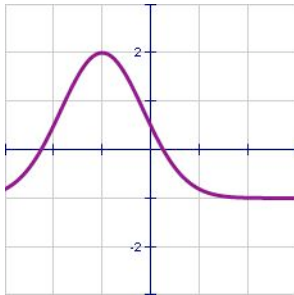
The graph of $y = f(x)$ is given:
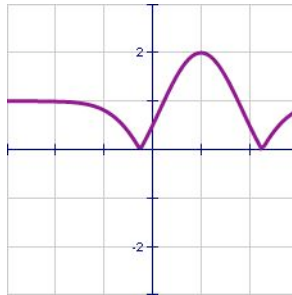
Match each of the following functions with their graph:

1. $y = f(2x)$
2. $y = -f(x)$
3. $y = f(x) - 1$
4. $y = |f(x)|$
5. $y = \dfrac{1}{2} \cdot f(x)$
6. $y = f(-x)$
7. $y = f(x+1)$
8. $y = f(x-1)$

A.

B.

C.

D.

E.

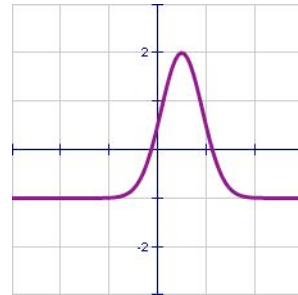F.

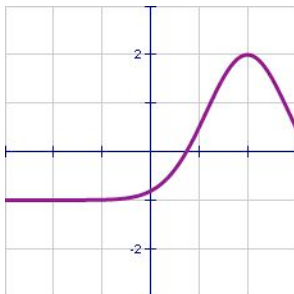G.
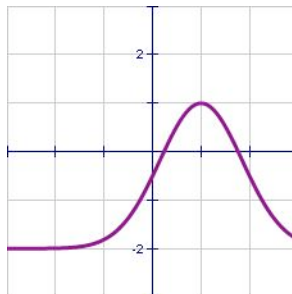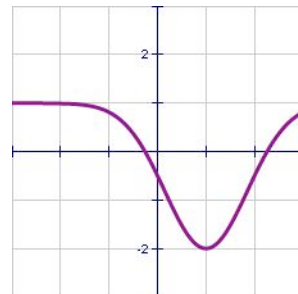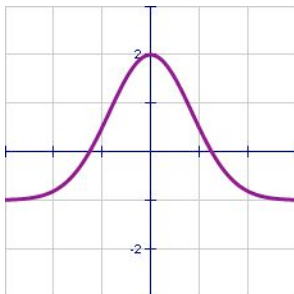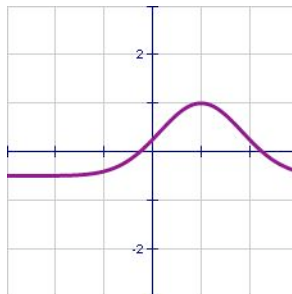
H.

1

In problems 9-12, choose the equation that yields the given graph:

9.
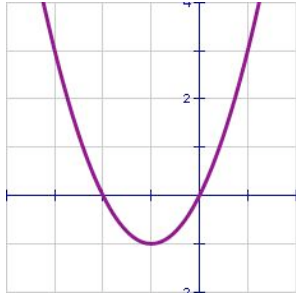
A. $y = (x + 1)^2 + 1$ D. $y = (x - 1)^2 - 1$

B. $y = (x + 1)^2 - 1$ E. $y = (x + 1)^2$

C. $y = (x - 1)^2$

10.
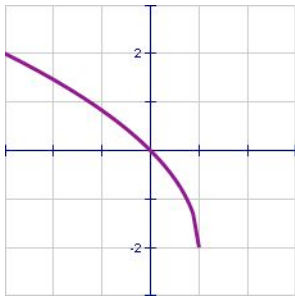
A. $y = \sqrt{x - 1} - 2$ D. $y = 2\sqrt{x - 1} - 2$

B. $y = \sqrt{1 - x} - 2$ E. $y = 2\sqrt{1 - x} - 2$

C. $y = 2\sqrt{x - 2}$

11.

A. $y = -|x - 2|$ D. $y = -2|x - 2|$

B. $y = |2 - x|$ E. $y = |x + 2|$

C. $y = |x| - 2$

12.

A. $y = 2x + 1$ D. $y = -2x - 1$

B. $y = 2x - 1$ E. $y = 2(x - 1)$

C. $y = -2x + 1$

Questions 13-20 have to do with the function $f(x) = 2x^2 - 8x + 6$, whose graph is a parabola.
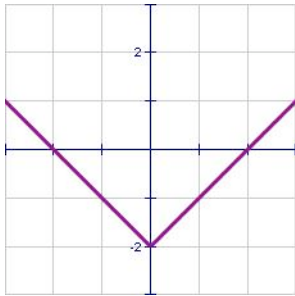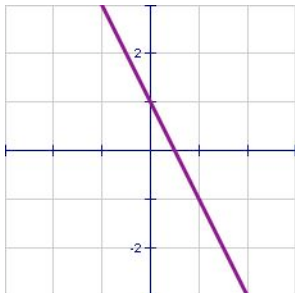
13. Does $f(x)$ open up or down?

  A. Up   B. Down

14. What is the vertex of the parabola?

  A. $(2, 2)$ B. $(-2, 2)$ C. $(-2, -2)$ D. $(2, -2)$

15. What is the equation of the axis of symmetry for the function?

  A. $x = 2$ B. $x = -2$ C. $y = 2$ D. $y = -2$

16. What is the y-intercept of the function?

  A. -8 B. -2 C. 2   D. 6

17. What are the x-intercepts of the function?

  A. None   B. 1 and 2   C. 2 and 3   D. 1 and 3

18. What is the domain of the function?

  A. $\{x | x \leq -2\}$ B. $\{x | x \geq -2\}$ C. $\{x | x \leq 2\}$ D. All real numbers

19. What is the range of the function?

  A. $\{y | y \leq -2\}$ B. $\{y | y \geq -2\}$ C. $\{y | y \leq 2\}$ D. All real numbers

20. On what interval is the function increasing?

  A. $(-\infty, 2)$ B. $(-\infty, -2)$ C. $(2, \infty)$ D. $(-2, \infty)$

Answers:

1. C

2. F

3. E

4. B

5. H

6. A

7. G

8. D

9. B

10. E

11. C

12. C

13. A

14. D

15. A

16. D

17. D

18. D

19. B

20. C