Exercise Set 2.5: Average Rate of Change

For problems 1 – 8, find the slope of the line that passes through the two points.

1. (1, 7), (2, -4)

2. (-3, 5), (6, 2)

3. $\left(\frac{1}{2},\frac{-2}{3}\right),\left(-\frac{3}{4},\frac{5}{6}\right)$

4. $\left(\frac{-3}{5},\frac{5}{12}\right),\left(\frac{5}{2},\frac{-1}{4}\right)$

5. (-0.25, -1.82), (3.20, -2.97)

6. (1.68, 4.72), (-3.32, 1.22)

7. $\left(4\sqrt{2},-3\sqrt{3}\right),\left(-2\sqrt{2},-\sqrt{3}\right)$

8. $\left(-3\sqrt{5},4\sqrt{2}\right),\left(\sqrt{5},-6\sqrt{2}\right)$

For problems 9 – 12, use the table of values to find the average rate of change over the given interval.

x	1	3.8	4.7	9	13.8	12
y	3	5.1	8.7	15.8	25.1	30.86

9. [1, 9]

10. [9, 12]

11. [3.8, 13.8]

12. [4.7, 13.8]

For problems 13 – 16, use the table of values to find the average rate of change over the given interval.

x	1	2	3	3.5	3.7	6
y	40	25	18	15	18	38

13. [1, 3]

14. [2, 6]

15. [2, 3.7]

16. [3.5, 6]

For problems 17 – 20, find the average rate of change of $f(x)=x^2+5x+6$ on each pair of intervals.

17. [1.9, 2] and [1.99, 2]

18. [2, 2.1] and [2, 2.01]

19. [0.9, 1] and [0.99, 1]

20. [1, 1.1] and [1, 1.01

For problems 21 – 26, find the average rate of change of each function on the given interval.

21. $f(x)=x^2-4x-12$ on [0, 6]

22. $f(x)=x^2-4x-12$ on [-1, 7]

23. $f(x)=3x^2-x-2$ on [-1, 4]

24. $f(x)=3x^2-x-2$ on [4, 7]

25. $f(x)=0.02x^2-1.6x+20.5$ on [25, 35]

26. $f(x)=0.05x^2-1.3x+22.8$ on [13, 23]