

Name: _____ Score: _____

Teacher: _____ Date: _____

Definite Integrals - Properties

For questions 1 and 2 determine the value of the given integral given that $\int_6^{11} f(x)dx = -7$ and

$$\int_6^{11} g(x)dx = 24$$

1. $\int_6^{11} 9f(x)dx = 63$

2. $\int_6^{11} 6g(x) - 10f(x)dx = 214$

For questions 3 – 10 determine the value of the given integral given that $\int_1^6 f(x)dx = -3$,

$$\int_1^{10} f(x)dx = 8, \int_1^6 g(x)dx = 4 \text{ and } \int_6^{10} g(x)dx = 8$$

3. $\int_1^6 \left(2f(x) + \frac{1}{2}g(x) \right) dx$
 $= -4$

4. $\int_{10}^6 g(x)dx$
 $= -8$

5. $\int_1^{10} g(x)dx$
 $= 12$

6. $\int_{10}^{10} f(x)dx$
 $= 0$

7. $\int_6^{10} f(x)dx$
 $= 11$

8. $\int_5^{10} f(x-4)dx$
 $= -3$

9. $\int_6^{10} (g(x) + 3)dx$
 $= 20$

10. $\int_{-1}^4 3g(x+2)dx$
 $= 12$

Given that $\int_0^2 h(x)dx = -2$ and $\int_2^5 h(x)dx = 6$ find the value of

11. $\int_0^5 h(x)dx$
 $= 4$

12. $\int_2^5 (h(x) + 2)dx$
 $= 12$

Let f be a function such that $\int_0^4 f(x)dx = 16$

13. Find the value of
 $\int_0^4 \frac{1}{4} f(x)dx$
 $= 4$

14. If
 $\int_0^4 (f(x) + k)dx = 28$
Find the value of $k = 3$

15.

Determine the value of $\int_{-4}^{20} f(x) dx$ given that $\int_{-4}^0 f(x) dx = -2$, $\int_{31}^0 f(x) dx = 19$ and $\int_{20}^{31} f(x) dx = -21$.

$= 0$

