

Calculus Practice: Techniques for Finding Antiderivatives 17b**Evaluate each definite integral.**

1) $\int_{-1}^0 -6x^2(2x^3 + 2)^2 dx; u = 2x^3 + 2$

2) $\int_{-1}^0 -18x(3x^2 - 2)^2 dx; u = 3x^2 - 2$

3) $\int_{-1}^1 -6x(x^2 - 3)^2 dx; u = x^2 - 3$

4) $\int_{-1}^0 -18x^2(3x^3 + 4)^2 dx; u = 3x^3 + 4$

5) $\int_0^1 24x^2(4x^3 - 1)^3 dx; u = 4x^3 - 1$

6) $\int_{-1}^1 8x(2x^2 - 4)^2 dx; u = 2x^2 - 4$

7) $\int_{-1}^1 6x(3x^2 - 2)^2 dx; u = 3x^2 - 2$

8) $\int_1^2 -4x(x^2 - 5)^2 dx; u = x^2 - 5$

9) $\int_{-1}^1 8x(2x^2 - 4)^3 dx; u = 2x^2 - 4$

10) $\int_{-2}^1 4x(x^2 - 2)^2 dx; u = x^2 - 2$

$$11) \int_{-3}^0 \frac{12x}{(3x^2 + 3)^2} dx; u = 3x^2 + 3$$

$$12) \int_{-3}^0 -\frac{8x}{(2x^2 + 2)^2} dx; u = 2x^2 + 2$$

$$13) \int_{-2}^0 -\frac{24x}{(4x^2 + 4)^2} dx; u = 4x^2 + 4$$

$$14) \int_0^3 -\frac{6x}{(3x^2 + 3)^2} dx; u = 3x^2 + 3$$

$$15) \int_{-2}^{-1} -\frac{4x}{(x^2 + 2)^2} dx; u = x^2 + 2$$

$$16) \int_{-1}^1 -\frac{4x}{(2x^2 + 2)^2} dx; u = 2x^2 + 2$$

$$17) \int_{-1}^0 -\frac{6x}{(x^2 + 1)^2} dx; u = x^2 + 1$$

$$18) \int_0^1 \frac{18x}{(3x^2 + 2)^2} dx; u = 3x^2 + 2$$

$$19) \int_{-2}^1 -\frac{6x}{(x^2 + 2)^2} dx; u = x^2 + 2$$

$$20) \int_{-2}^0 \frac{12x}{(3x^2 + 2)^2} dx; u = 3x^2 + 2$$

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Evaluate each definite integral.

1) $\int_{-1}^0 -6x^2(2x^3 + 2)^2 dx; u = 2x^3 + 2$

$$-\frac{8}{3} \approx -2.667$$

2) $\int_{-1}^0 -18x(3x^2 - 2)^2 dx; u = 3x^2 - 2$

$$9$$

3) $\int_{-1}^1 -6x(x^2 - 3)^2 dx; u = x^2 - 3$

$$0$$

4) $\int_{-1}^0 -18x^2(3x^3 + 4)^2 dx; u = 3x^3 + 4$

$$-42$$

5) $\int_0^1 24x^2(4x^3 - 1)^3 dx; u = 4x^3 - 1$

$$40$$

6) $\int_{-1}^1 8x(2x^2 - 4)^2 dx; u = 2x^2 - 4$

$$0$$

7) $\int_{-1}^1 6x(3x^2 - 2)^2 dx; u = 3x^2 - 2$

$$0$$

8) $\int_1^2 -4x(x^2 - 5)^2 dx; u = x^2 - 5$

$$-42$$

9) $\int_{-1}^1 8x(2x^2 - 4)^3 dx; u = 2x^2 - 4$

$$0$$

10) $\int_{-2}^1 4x(x^2 - 2)^2 dx; u = x^2 - 2$

$$-6$$

$$11) \int_{-3}^0 \frac{12x}{(3x^2 + 3)^2} dx; u = 3x^2 + 3$$
$$-\frac{3}{5} = -0.6$$

$$12) \int_{-3}^0 -\frac{8x}{(2x^2 + 2)^2} dx; u = 2x^2 + 2$$
$$\frac{9}{10} = 0.9$$

$$13) \int_{-2}^0 -\frac{24x}{(4x^2 + 4)^2} dx; u = 4x^2 + 4$$
$$\frac{3}{5} = 0.6$$

$$14) \int_0^3 -\frac{6x}{(3x^2 + 3)^2} dx; u = 3x^2 + 3$$
$$-\frac{3}{10} = -0.3$$

$$15) \int_{-2}^{-1} -\frac{4x}{(x^2 + 2)^2} dx; u = x^2 + 2$$
$$\frac{1}{3} \approx 0.333$$

$$16) \int_{-1}^1 -\frac{4x}{(2x^2 + 2)^2} dx; u = 2x^2 + 2$$
$$0$$

$$17) \int_{-1}^0 -\frac{6x}{(x^2 + 1)^2} dx; u = x^2 + 1$$
$$\frac{3}{2} = 1.5$$

$$18) \int_0^1 \frac{18x}{(3x^2 + 2)^2} dx; u = 3x^2 + 2$$
$$\frac{9}{10} = 0.9$$

$$19) \int_{-2}^1 -\frac{6x}{(x^2 + 2)^2} dx; u = x^2 + 2$$
$$\frac{1}{2} = 0.5$$

$$20) \int_{-2}^0 \frac{12x}{(3x^2 + 2)^2} dx; u = 3x^2 + 2$$
$$-\frac{6}{7} \approx -0.857$$