

## U Substitution Circuit Training

Start with the instructed box by putting a 1 in that box. Work out the problem and then find the box with that answer in it. Put a 2 in that box and continue until you have completed the circuit.

Answer: $4 \ln 2x^5 + 1  + C$ # <u>1</u> $\int (-16x^3 + 7x^{\frac{2}{5}} + 3) dx$	Answer: $\frac{1}{3}(2x^5 - 1)^6 + C$ # <u>8</u> $\int \frac{3x^2}{(x^3+4)^4} dx$
Answer: $\frac{1}{6}(2x^3 + 5)^6 + C$ # <u>6</u> $\int 8x^3(2x^4 + 5)^3 dx$	Answer: $-4x^4 + 5x^{\frac{7}{5}} + 3x + C$ # <u>2</u> $\int (8x^3 + \frac{2}{x^3}) dx$
Answer: $\frac{3}{7}(3x^2 - 1)^{\frac{7}{3}} + C$ # <u>12</u> $\int 20x^3 e^{5x^4-4} dx$	Answer: $\ln 3x^2 + 4  + C$ # <u>15</u> $\int \frac{40x^4}{2x^5+1} dx$
Answer: $\frac{1}{8}(2x + 5)^4 + C$ # <u>5</u> $\int (2x^3 + 5)^5 6x^2 dx$	Answer: $\frac{-1}{3(x^3+4)^3} + C$ # <u>9</u> $\int 3x^2 \sqrt{x^3 - 4} dx$

Answer:  $2x^4 - \frac{1}{x^2} + C$

# 3  $\int \left(\frac{5}{x} + 3e^x\right) dx$

Answer:  $\frac{1}{4}(2x^4 + 5)^4 + C$

# 7  $\int 20x^4(2x^5 - 1)^5 dx$

Answer:  $\frac{2}{3}(x^3 - 4)^{\frac{3}{2}} + C$

# 10  $\int 3e^{3x}(e^{3x} + 1)^5 dx$

Answer:  $\frac{1}{6}(e^{3x} + 1)^6 + C$

# 11  $\int (3x^2 - 1)^{\frac{4}{3}} \cdot 6x dx$

Answer:  $3e^{4x^3-5} + C$

# 14  $\int \frac{6x}{3x^2+4} dx$

Answer:  $5 \ln|x| + 3e^x + C$

# 4  $\int (2x + 5)^3 dx$

Answer:  $e^{5x^4-4} + C$

# 13  $\int 36x^2 e^{4x^3-5} dx$