1. (1 pt) Find the antiderivatives for

$$\frac{dy}{du} = 5u^4 - 5u^2 - 7.$$

$y =$ _____ $+ C.$

Answer(s) submitted:

- `(u^5) - ((5u^3)/3) - (7u)`

(correct)
Correct Answers:

- `(5*u**(4+1))/(4+1) - (5*u**(2+1))/(2+1) - 7*u`

2. (1 pt) Find the antiderivatives for

$$\frac{dy}{dx} = 6e^x + 5.$$

$y =$ _____ $+ C.$

Answer(s) submitted:

- `(5x + 6(e^x))`

(correct)
Correct Answers:

- `6*exp(x) + 5*x`

3. (1 pt) Consider the function $f(x) = 16x^3 - 12x^2 + 10x - 5$.
Enter an antiderivative of $f(x)$

_____

Answer(s) submitted:

- `4x^4 - 4x^3 + 5x^2 - 5x`

(correct)
Correct Answers:

- `4*x^4-4*x^3+5*x^2-5*x`

4. (1 pt) Find the most general antiderivative for the function $\frac{1}{8\sqrt{u}}$.
Note: Don't enter the **+C** . It's included for you.
Antiderivative = _____ $+ C.$

Answer(s) submitted:

- `(sqrt(u) / 4)`

(correct)
Correct Answers:

- `(2/8)*u**(1/2)`

5. (1 pt) Find the most general antiderivative for the function $\left(5x^4 - \frac{3}{x^6} - 3\right)$.
Note: Don't enter the **+C** . It's included for you.
Antiderivative = _____ $+ C.$

Answer(s) submitted:

- `(x^5) + ((3)/(5(x^5))) - 3x`

(correct)
Correct Answers:

- `5*(x**5)/5 - 3*(x**(-6+1))/(-6+1) - 3*x`

6. (1 pt) Let $f(x) = \frac{2}{x} - 5e^x$.
Enter an antiderivative of $f(x)$

_____

Answer(s) submitted:

- `2ln(x) - 5(e^x)`

(incorrect)
Correct Answers:

- `2 * ln(abs(x)) -5 * e^x`

7. (1 pt) Find the antiderivatives for

$$\frac{dx}{dt} = 8t^{-1} + 7.$$

$x =$ _____ $+ C.$

Hint: In WeBWorK, you write $|x|$ with "abs(x)".
Answer(s) submitted:

- `7t + 8ln(t)`

(correct)
Correct Answers:

- `8*ln(abs(t)) + 7*t`

8. (1 pt) Let $f(x) = \frac{19}{\sqrt{1-x^2}}$.
Enter an antiderivative of $f(x)$
_____ $+C$

Answer(s) submitted:

- `19arcsin(x)`

(correct)
Correct Answers:

- `19 * asin(x)`

9. (1 pt) Let $f(x) = \dfrac{-6}{x^2+1}$.
Enter an antiderivative of $f(x)$

Answer(s) submitted:

- `-6arctan(x)`

(correct)
Correct Answers:

- `-6 * atan(x)`

10. (1 pt) Find the most general antiderivative for the function $4\sqrt{x} + \dfrac{6}{\sqrt{x}}$.
Note: Don't enter the **+C** . It's included for you.
Antiderivative = _____ $+ C$.

Answer(s) submitted:

- `((4/3)sqrt(x))(2x+9)`

(correct)
Correct Answers:

- `(2*4/3)*x**(3/2) + 2*6*x**(1/2)`

11. (1 pt) Find the most general antiderivative for the function $\dfrac{4}{\sqrt[3]{x}} - 4\sqrt[3]{x^2}$.
Note: Don't enter the **+C** . It's included for you.
Antiderivative = _____ $+ C$.

Answer(s) submitted:

- `(6x^(2/3)) - ((12/5)x((x^2)^(1/3)))`

(correct)
Correct Answers:

- `(3*4/2)*x**(2/3) - (3*4/5)*x**(5/3)`

12. (1 pt) Find an antiderivative for $\dfrac{7x^4 - 8x}{x^3}$.

Antiderivative = _____

Answer(s) submitted:

- `((7x^2)/2) + (8/x)`

(correct)
Correct Answers:

- `(8/x) + 7*(x**2)/2`

13. (1 pt) Find an antiderivative for the function $\dfrac{6 - 4xe^x}{x}$.

Antiderivative = _____

Answer(s) submitted:

- `6ln(x)- 4(e^x)`

(correct)
Correct Answers:

- `-4*exp(x) + 6*ln(abs(x))`

14. (1 pt) Find the particular antiderivative that satisfies the following conditions:

$$R'(x) = 7 - 0.4x; \quad R(0) = 4.$$

$R(x) =$ _____

Answer(s) submitted:

- `7x - (0.2x^2) + 4`

(correct)
Correct Answers:

- `7*x - (0.4/2)*x**2 + 4`

15. (1 pt) Consider the function $f(x) = \dfrac{9}{x^3} - \dfrac{7}{x^7}$.
Let $F(x)$ be the antiderivative of $f(x)$ with $F(1) = 0$.
Then $F(x) =$ _____

Answer(s) submitted:

- `((7-27(x^4))/(6x^6)) + (20/6)`

(correct)
Correct Answers:

- `-4.5*x^(-2)+(1.16666666666667)*x^(-6)+3.33333333333333`

16. (1 pt) Consider the function $f(t) = 8\sec^2(t) - 9t^3$. Let $F(t)$ be the antiderivative of $f(t)$ with $F(0) = 0$.
Then $F(t)$ equals

Answer(s) submitted:

- `8tan(t) - ((9/4)(t^4))`

(correct)
Correct Answers:

- `8 * tan(t) - 2.25*t^4`

17. (1 pt) Given $f'(x) = 5\cos x - 9\sin x$ and $f(0) = -3$, find $f(x) =$ _____

Answer(s) submitted:

- `5sin(x) + 9cos(x) -12`

(correct)
Correct Answers:

- `5*sin(x)+9*cos(x)+(-3-9)`

18. (1 pt) Find the particular antiderivative that satisfies the following conditions:

$$p'(x) = \frac{40}{x^3}; \quad p(4) = 2.$$

$p(x) =$ _____

Answer(s) submitted:

- `((-20/(x^2)) + (52/16))`

(correct)
Correct Answers:

- `(-40/(2*x**2)) + (40/(2*4**2)) + 2`

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19. (1 pt) Find the particular antiderivative that satisfies the following conditions:

$$\frac{dM}{dt} = \frac{8t^2 - 7}{t^2}; \quad M(4) = 6.$$

$M =$ _____

Answer(s) submitted:

- `8t + (7/t) - (111/4)`

(correct)
Correct Answers:

- `-4*8 - 7/4 + 6 + 7/t + 8*t`

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20. (1 pt) Find the particular antiderivative that satisfies the following conditions:

$$\frac{dy}{dx} = \frac{7x+8}{\sqrt[3]{x}}; \quad y(1) = 8.$$

$y =$ _____

Answer(s) submitted:

- `(((3/5)x^(2/3))(7x+20)-(41/5))`

(correct)
Correct Answers:

- `-3*7/5 - 3*8/2 + 8 + (3/2)*8*x**(2/3) + (3/5)*7*x**(5/3)`

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21. (1 pt) Consider the function $f(x)$ whose second derivative is $f''(x) = 9x + 9\sin(x)$. If $f(0) = 3$ and $f'(0) = 4$, what is $f(x)$?

Answer(s) submitted:

- `(((3/2)(x^3)) + 13x - 9sin(x) + 3)`

(correct)
Correct Answers:

- `1.5 * (x)^3 - 9*sin(x) +13*x +3`

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22. (1 pt) Given $f'''(x) = e^x$ with $f''(0) = 3, f'(0) = 4$, then $f(x) =$ _____ $+ C$.
Note that your answer should not contain a general constant.
Answer(s) submitted:

- `x(x+3) + (e^x)`

(correct)
Correct Answers:

- `exp(x)+(3-1)*x**2/2+(4-1)*x`

---

23. (1 pt) Given that the graph of $f(x)$ passes through the point $(3,7)$ and that the slope of its tangent line at $(x, f(x))$ is $3x+2$, what is $f(2)$? _____
Answer(s) submitted:

- `-5/2`

(correct)
Correct Answers:

- `-2.5`

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24. (1 pt) A particle is moving with acceleration $a(t) = 36t + 8$. its position at time $t = 0$ is $s(0) = 16$ and its velocity at time $t = 0$ is $v(0) = 5$. What is its position at time $t = 13$?

Answer(s) submitted:

- `13939`

(correct)
Correct Answers:

- `13939`