

ВАРИАНТ 1

1. $y = \frac{1}{x} + \frac{1}{\sqrt{x^7}} - \frac{3}{\sqrt[3]{x^2}}$
2. $y = \sqrt{\frac{\sin 2x}{1 + \cos 2x}}$
3. $y = \sin 3x \cdot \arccos x - \pi x^2$
4. $y = 3^x (\arcsin(e^x + 3^x))$
5. $y = \left(\frac{x}{2} - e^{x^2}\right) / (e^{x/2})$
6. $y = \ln^3(x^2 - 2 \ln \sqrt{x})$
7. $y = \sin^2 x \cdot e^{0,5 \operatorname{ctg}^2 x}$
8. $y = \arccos^2 x \cdot (\ln^2(\arccos x) + 2)$
9. $y = \sqrt[4]{9 + 6\sqrt[5]{x^9}}$
10. $y = \ln \sin \operatorname{tg} 4^{\operatorname{arctg} 3x}$
11. (по определению)
 $y = \sqrt{x^2 - x}$

ВАРИАНТ 3

1. $y = \frac{(1-x)^2}{(1+x)^3}$
2. $y = x^2 \sin 2x \cdot \operatorname{tg} x$
3. $y = \frac{1 + \arcsin x}{x^3} + \sqrt{x} \cdot \operatorname{arctg} x$
4. $y = \ln \frac{1 - \sqrt[3]{x}}{\sqrt{1 + \sqrt[3]{x}}}$
5. $y = e^{2x} \cos^3 2x$
6. $y = \ln \sin 12^{\cos^2(\pi-x)}$
7. $y = \frac{\log_2 \cos \sqrt{2x}}{x^5}$
8. $y = (\arccos(1/x))^3 \sqrt{x}$
9. $y = \sin^4(\cos(\pi x - 3))$
10. $y = 8^{2x} \cdot \arcsin \sqrt{1-5x}$
11. (по определению)
 $y = \frac{1}{2x-5}$

ВАРИАНТ 2

1. $y = x^3 \cdot \sqrt{1+x^2}$
2. $y = \left(\frac{\sin 3x}{1 + \operatorname{tg} 3x}\right)^3$
3. $y = (ax^2 - \arccos 3x) \cdot \frac{\cos 3x}{x^2}$
4. $y = 0,5(\operatorname{tg} 2x + \ln \cos^2 2x)$
5. $y = \frac{7^{2x} + 1}{x^2 \operatorname{arctg} x}$
6. $y = e^{-\sin^2 6x}$
7. $y = \ln \log_4 \sin 4x$
8. $y = 2 \sin(1/x) \cdot \operatorname{arctg}(\sin(1/x))$
9. $y = \frac{1}{\sqrt{1 + e^{-\sqrt{x}}}}$
10. $y = \cos \operatorname{tg} 3^{-2\sqrt{\cos x}}$
11. (по определению)
 $y = x^3 + x$

ВАРИАНТ 4

1. $y = \sqrt{2+x^2} \cdot \sqrt[3]{3+x^3}$
2. $y = (3x^3 + 1)\sqrt{\cos 3x}$
3. $y = \frac{\arcsin(x - \sqrt{x})}{4 - x^2}$
4. $y = x^2 \log_3 x + 5^{-\sin 2x}$
5. $y = \frac{1}{\sqrt{x}} \operatorname{arctg} \frac{2}{\sqrt{x}}$
6. $y = \frac{x}{\sqrt{3-x^2}} - \lg 3^{2x}$
7. $y = \sqrt{1-9x^2} \cdot e^{\arcsin 3x}$
8. $y = \operatorname{arctg} \frac{\sin x + \cos x}{\sin x - \cos x}$
9. $y = \ln(\sin x \cdot \sqrt{1-x^2})$
10. $y = \operatorname{tg} \ln \sin 4^{\operatorname{ctg} \sqrt{x}}$
11. (по определению)
 $y = \frac{2}{\sqrt{1-3x}}$

ВАРИАНТ 5

1. $y = (1 + \sqrt{x})(1 - 2\sqrt{x})$

2. $y = \frac{\cos x}{x^2} + \frac{x^2}{\sin x}$

3. $y = \arccos 2x - x^2 \arcsin 2x$

4. $y = \frac{xe^x}{\operatorname{arctg} x}$

5. $y = \frac{\sqrt{3}}{6} \operatorname{arctg} \frac{4x-1}{\sqrt{3}}$

6. $y = \frac{1}{\cos(x - \cos x)}$

7. $y = \frac{1}{4} \ln \frac{x^2 - 1}{x^2 + 1}$

8. $y = 7^{\sqrt[3]{x}} \cdot \sin^3 x$

9. $y = \ln x \cdot \sin \sqrt{\ln x}$

10. $y = \cos \log_2 tge^{\sin x}$

11. (по определению)

$$y = \frac{1}{2x^2 + x}$$

ВАРИАНТ 7

1. $y = (\sqrt[3]{x} + 2x)(1 + \sqrt[3]{x^2} + 3x)$

2. $y = \frac{\arccos 2x}{x^3 + 2x}$

3. $y = (\operatorname{tg} x + \operatorname{ctg} x) \sin \frac{1}{x}$

4. $y = 2^{2x} \log_5 x$

5. $y = \arcsin(\sin^2 x - \cos 2x)$

6. $y = \ln \operatorname{tg} x - \operatorname{ctg}^2 x - \frac{1}{4} \operatorname{tg}^4 x$

7. $y = \sin^2 \left(\frac{1-x}{1+x} \right)$

ВАРИАНТ 6

1. $y = (x^2 - 4)(\sqrt{x} + 3)$

2. $y = \frac{2 \cos x}{3x + \sin x}$

3. $y = \frac{\operatorname{arctg} 2x}{x^3 + \arcsin 2x}$

4. $y = \sin 8x \cdot e^{\frac{1}{\cos 8x}}$

5. $y = \ln \sin \operatorname{arctg} \sqrt{1+x^2}$

6. $y = e^x \cos x + x^5 3^x$

7. $y = \log_3 \left(\arccos \frac{1}{\sqrt{x}} \right)$

8. $y = \frac{\arcsin 7x}{\sqrt{1-7\sqrt{x}}}$

9. $y = \frac{(e^x)^2}{e^x + e^{-x}}$

10. $y = \operatorname{ctg} \ln \arccos 2^{\sqrt{\cos x}}$

11. (по определению)

$$y = \frac{3}{5x + 2}$$

ВАРИАНТ 8

1. $y = 4x\sqrt[3]{x} + \frac{\sqrt[3]{x^2}}{3x}$

2. $y = \frac{\sin x + \cos x}{\operatorname{tg} x}$

3. $y = -8\sqrt[4]{x} \cdot \operatorname{arctg}(\operatorname{ctg} x)$

4. $y = \arcsin \left(\sin^2 \frac{1}{x} \right)$

5. $y = 2^{1-\sqrt{\cos x}} + e^{1-\cos x}$

6. $y = e^x \operatorname{tg} x + \frac{\cos x}{e^x}$

7. $y = \log_3 (\arccos x - x^2)$

$$8. y = \frac{x\sqrt{1-x^2}}{1+x^2} + 7^{\operatorname{tg}x^2}$$

$$9. y = \frac{1}{\operatorname{arccctge}^{-2x}}$$

$$10. y = \ln^3(x^2 - 2 \ln \cos 2^{\frac{1}{x}})$$

11. (по определению)

$$y = \sqrt{4-2x}$$

ВАРИАНТ 9

$$1. y = (\sqrt{x} + 2)\left(\frac{1}{\sqrt{x}} - x\right)$$

$$2. y = \frac{\sin x}{\cos x + x \sin x}$$

$$3. y = \frac{3}{\operatorname{arctg} 2x + \operatorname{arctg} 2x}$$

$$4. y = \arccos\left(-\frac{1}{x}\right) + \log_2(x^2 - 2x)$$

$$5. y = \ln(e^x \cos x - e^{-x} \sin x)$$

$$6. y = \operatorname{arctg} \frac{1}{\sqrt{\operatorname{tg}(1/x^3)}}$$

$$7. y = \frac{\ln 2 \cdot \sin x + \cos x}{2^x}$$

$$8. y = \operatorname{arctg}(\operatorname{tg} \sqrt{x})$$

$$9. y = \frac{1}{9} e^{\cos 9x} \sin 9x$$

$$10. y = 6^{\frac{2 \operatorname{ctgx}}{\sqrt{\operatorname{tg} 2x}}}$$

11. (по определению)

$$y = 3x^2 - x + 2$$

ВАРИАНТ 11

$$1. y = \frac{1}{x^3 - 3x + 6}$$

$$2. y = \frac{\sin x}{x^2} + x^{2/3} \cos x$$

$$3. y = \frac{2 \operatorname{arctg} x - x}{3 \operatorname{arctg} x}$$

$$4. y = x^2 \arcsin(3 \ln^2 x)$$

$$8. y = \sin 8x \cdot \ln \frac{8}{x}$$

$$9. y = 3^{\operatorname{arctg} x} \cdot \sqrt{x^2 - 9}$$

$$10. y = \frac{1}{3} \sin^3(6 \cos^2 x + 7)$$

11. (по определению)

$$y = \frac{-3}{\sqrt{2x-1}}$$

ВАРИАНТ 10

$$1. y = \frac{2x^4}{4-x^2}$$

$$2. y = (2-x^2) \cos 3x + 2x \sin x$$

$$3. y = \frac{\cos(\operatorname{tg} x)}{x^2 \operatorname{ctg} x}$$

$$4. y = 6^x \operatorname{arctg} x + \log_6 x$$

$$5. y = \sqrt[3]{e^x - e^{-x}}$$

$$6. y = \operatorname{tg}^2 \sin 3x - \operatorname{ctg} x^2$$

$$7. y = \operatorname{arccctge}^x - \ln \sqrt{\frac{e^{2x}}{e^{2x} + 1}}$$

$$8. y = 8^{1-2\sqrt{\cos 2x}}$$

$$9. y = 4^{ax} (a\sqrt{\sin x} - b \cos x)$$

$$10. y = x^2 \ln^3(-1/x)$$

11. (по определению)

$$y = \frac{2}{x-x^2}$$

ВАРИАНТ 12

$$1. y = \frac{1-x^3}{2\sqrt[3]{x}}$$

$$2. y = x^2 \operatorname{ctg} x - \frac{\operatorname{tg} x}{x^2}$$

$$3. y = (5x^2 - 3x)^3 - \sqrt[4]{e^{4x-5} + 4}$$

$$4. y = xe^x (\cos x - \sin x)$$

$$5. y = 2 \operatorname{arctg} \sqrt{\frac{1-x}{1+x}}$$

$$6. y = \frac{\sin 3x}{2^{1/x} e^{2x}}$$

$$7. y = 2^{\sqrt{\cos x}} \cdot \operatorname{ctg}(\sin x^2)$$

$$8. y = \sqrt{e^x} (\log_3 x + 1)$$

$$9. y = \sin \operatorname{arctg}(3^{1/x^2})$$

$$10. y = e^{-x^3} \ln \sqrt{x+3}$$

11. (по определению)
 $y = \sqrt{x^2 + 1}$

$$5. y = \frac{\arccos x}{x - \arcsin x}$$

$$6. y = \frac{3}{\log_3^2(7x - \sqrt{x})}$$

$$7. y = \sin \operatorname{arctg} e^{\frac{1}{\ln x}}$$

$$8. y = \frac{2}{3} \ln \frac{x^2 + 1}{\sqrt{x^2 - x + 1}}$$

$$9. y = 2^{\operatorname{ctg}(1/x)}$$

$$10. y = \frac{2 + x \operatorname{arctg} x}{\sqrt{1+x^2}}$$

11. (по определению)
 $y = 3x - 2x^3$

ВАРИАНТ 13

$$1. y = \frac{\sqrt[4]{x^3} - 2x}{x^2 + \sqrt{x} + 1}$$

$$2. y = \frac{\operatorname{ctg} 3x}{2\sqrt{x} - 1}$$

$$3. y = \frac{\arccos x + x}{\arcsin x - x}$$

$$4. y = 3 \operatorname{ctg} x \cdot (e^{2x} - 2)$$

$$5. y = 2 \operatorname{arctg} \sqrt[3]{\frac{x^2 - 2}{\sqrt{6}}}$$

$$6. y = \ln(\ln^2(\ln^3(x - x^2)))$$

$$7. y = \log_3 \sin \operatorname{arctg} \sqrt{3x}$$

$$8. y = \frac{2^{\sqrt{\arcsin 3x}}}{\sqrt{1-9x^2}}$$

$$9. y = \ln(e^{-2x} + xe^{-2x})$$

$$10. y = 5 \operatorname{ctg}(\ln 2x) - 0,5 \ln(\operatorname{ctg} 4x)$$

11. (по определению)
 $y = 2x^2 - 5x$

ВАРИАНТ 15

$$1. y = \frac{1-x^3}{1+x^3} + \frac{2}{\sqrt{x}}$$

ВАРИАНТ 14

$$1. y = \frac{x^2 + 1}{3(x^2 - 1)} + \sqrt[3]{x^2}$$

$$2. y = \frac{\sqrt[3]{x^4}}{\operatorname{ctg}^2 x - 2}$$

$$3. y = (\operatorname{tg} x - 1) \arcsin x^2$$

$$4. y = \frac{\sqrt[3]{x+1}}{\log_2 x + e^x}$$

$$5. y = \cos \operatorname{tg} 2^{\sin(1/x)}$$

$$6. y = 7e^{\sqrt{x}} (\sqrt[7]{x} - 1)$$

$$7. y = \frac{\ln(2x-1)}{\sqrt[3]{(5x-2)^2}}$$

$$8. y = \frac{\sin x}{4 \cos^4 x} + 3 \cos x \cdot \sin^2 x$$

$$9. y = 10^{x^2 \operatorname{arctg} x^2}$$

$$10. y = \log_2 \log_3 \ln \frac{\sqrt{x}}{2}$$

11. (по определению)
 $y = \frac{3}{(x+1)^2}$

ВАРИАНТ 16

$$1. y = \frac{3}{1-2x^3} - \sqrt[3]{3x}$$

2. $y = \frac{4 \cos^2 4x}{\operatorname{tg} x - 2x}$
3. $y = (x - \operatorname{arctg} x) \arcsin(1/x)$
4. $y = \frac{\sin^2 x}{1 + \operatorname{ctg} x} + \frac{\cos^2 x}{1 + \operatorname{tg} x}$
5. $y = \frac{1 - \ln 2x}{1 + \ln 2x}$
6. $y = \sin \log_2 \operatorname{tg} 6^{\cos 3x}$
7. $y = 12x^3 \operatorname{arctg} \sqrt[3]{x^2}$
8. $y = \ln^2 \log_5 3^{x^3 - 3x^2 + 2x}$
9. $y = \ln^4 \sqrt{\frac{x^2 + x + 1}{x^2 - x + 1}}$
10. $y = \frac{\arcsin^2 2x}{2} - \sqrt{1 - 4x^2}$
11. (по определению)

$$y = \frac{2}{3 - 5x}$$

ВАРИАНТ 17

1. $y = \frac{x^2 + x - 1}{x^3 + 1} - \sqrt[3]{7x}$
2. $y = (3x^2 - 2) \operatorname{tg} 3x$
3. $y = \frac{\arccos^2 2x}{1 - x^2}$
4. $y = \sqrt{\frac{1 + 2e^x}{1 - 2e^{-x}}}$
5. $y = \ln \sqrt{1 + x^2} + \operatorname{arctg} 3x + \frac{2x^2}{2x^3 - 1}$
6. $y = \sin \log_3 \operatorname{ctg} e^{e^x}$
7. $y = \cos(\operatorname{arctg} \ln(1 - x))$
8. $y = 2 \log_2 \ln x - 2 \ln \log_2 2x$
9. $y = \frac{4^{\operatorname{tg} \sqrt{x}}}{\sqrt{x}}$
10. $y = e^{\arcsin \sqrt{1 + \ln(2x+3)}}$
11. (по определению)

$$y = -x^2 + 4x$$

2. $y = \sqrt{\operatorname{tg} x} \cdot \sin x^2 + \ln 2$
3. $y = \sqrt[5]{x^3 - 1} \operatorname{arctg} 2x$
4. $y = \frac{x^3 + 2^{x-x^2}}{e^{\sqrt{x}}}$
5. $y = \log_3 \sqrt[6]{\cos 2x + \sin 2x}$
6. $y = \cos 2^{3x-1} + 4^{\sqrt{2x-1}}$
7. $y = \sqrt[3]{\cos x} \cdot e^{-\arcsin 3x}$
8. $y = \log_3^2 \left(\frac{1}{\cos 2^{\sqrt{x}}} \right)$
9. $y = 3x^3 \arccos(2 \cos^2 x)$
10. $y = \frac{1}{(\operatorname{arctg} e^{4x})^2}$
11. (по определению)

$$y = \sqrt{3x - x^2}$$

ВАРИАНТ 18

1. $y = (\sqrt[4]{x^3} + 1)x^3$
2. $y = \frac{3\sqrt[3]{x^2} - \cos 3x}{2 \sin 3x}$
3. $y = \arccos(\sin x^2 - \cos x^2)$
4. $y = \frac{a^2 + 9\sqrt[3]{x^2 - 1}}{\arccos x}$
5. $y = \log_2 \operatorname{tg}(x/2) - \operatorname{ctg} x \cdot \ln(\sin x)$
6. $y = \frac{2 - 10^{2x}}{2 + 10^{2x}}$
7. $y = \operatorname{arctg}(\ln \sin 2^{\frac{1}{\sqrt{x}}})$
8. $y = \frac{\log_{\pi} \operatorname{ctg} 2x}{e^{1-2x}}$
9. $y = \sqrt{2 + 2x^2} \cdot \cos \sqrt{2x}$
10. $y = x^{a^a} + a^{x^a} + a^{a^x}$
11. (по определению)

$$y = 3x - (x+1)^2$$

ВАРИАНТ 19

1. $y = \frac{2}{(x+2)^3} + \frac{3}{x^2 - 1}$

2. $y = \frac{2 + 4 \sin 2x}{3 - 2 \cos 3x}$

3. $y = x^3 \cos 2x \cdot \arctg 2x$

4. $y = \frac{\log_9 x}{9} + x^2 3^{2x}$

5. $y = \frac{a^x}{1 + a^{2x}} + \operatorname{arctg} a^{-x}$

6. $y = \ln(e^x + \sqrt{1 + e^{2x}})$

7. $y = 2^{\arccos \sqrt{3x}}$

8. $y = \log_2^3 (\sin \operatorname{tg} x^2)$

9. $y = \ln(x + 2x^3) \cdot \ln \sqrt{x + x^2}$

10. $y = \arcsin^2 (\operatorname{ctg} (3^{(2x-x^2)}))$

11. (по определению)

$$y = \sqrt{2x + x^2}$$

ВАРИАНТ 21

1. $y = \frac{2 - \sqrt[3]{2x}}{2 + \sqrt[3]{2x}}$

2. $y = \frac{3 \cos 2x + x^2}{1 + 2x^3}$

3. $y = (x^3 - \operatorname{arctg} 3x)(\operatorname{arcc} \operatorname{tg} x - 2x)$

4. $y = 4^{2x} \arccos 4x - \frac{e^x}{x^2}$

5. $y = \sqrt[3]{2 + \log_2 \sin 3x}$

6. $y = 6^{\sin^2(1/x) + 4 \cos(1/x)}$

7. $y = \frac{\sqrt{\operatorname{ctg} 2x - 3}}{2^{3-2x}}$

8. $y = \arcsin \left(\frac{\sin a \cdot \sin x}{1 - \cos a \cdot \cos x} \right)$

9. $y = x - \ln(2e^x + \sqrt{e^{2x} + 4e^x})$

10. $y = 4\sqrt[3]{\operatorname{ctg}^2 x} + \sqrt[3]{\operatorname{tg}^4 x}$

ВАРИАНТ 20

1. $y = \frac{3}{5 - 3x^2} + \frac{x^2}{5\sqrt{x}}$

2. $y = \frac{(2 - x^2) + 2 \cos 2x}{3 \sin 2x}$

3. $y = \operatorname{arctg} 4x \cdot (\sqrt[5]{x^3} - 1)$

4. $y = \frac{x^2}{2^x} - \frac{4^x - 1}{\operatorname{tg} x}$

5. $y = 2 \ln(2x - 3\sqrt{1 - 4x^2})$

6. $y = \sqrt{a^2 - x^2} - a \cdot \arcsin \frac{x}{a}$

7. $y = \log_3^2 (3x^2 - 2x + 5)$

8. $y = e^{\cos 3x \cdot \sqrt{\sin 3x}}$

9. $y = \operatorname{tg} 3^{4x} \cdot \operatorname{ctg} 4^{3x}$

10. $y = \frac{e^{-x^2}}{\sqrt{1 - e^{-2x^2}}}$

11. (по определению)

$$y = \frac{x}{3x + 2}$$

ВАРИАНТ 22

1. $y = \frac{\sqrt{x} - \sqrt[3]{x}}{1 + \sqrt{2x}}$

2. $y = \frac{1}{4} \operatorname{tg}^4 3x + \frac{2}{\cos^2 3x}$

3. $y = \frac{3 \sin^2 2x - \cos 2x}{\operatorname{tg} x}$

4. $y = 3^x \arccos 3x - \arcsin^3 3x$

5. $y = \ln \left(\frac{5x - 3}{2x + 7} \right)^4$

6. $y = e^{-3x} \cdot \sqrt[3]{\sin 3x}$

7. $y = \operatorname{arctg} \sin^2 e^{\sqrt{5x}}$

8. $y = \frac{x \operatorname{arctg} 2x}{\ln^5 2x}$

9. $y = 4^{x^2 \sqrt{1 + \sqrt{x}}}$

10. $y = \log_3 (x^7 - \cos 2^{\sqrt{2x}})$

11. (по определению)

$$y = \sqrt{x^2 + 2x}$$

ВАРИАНТ 23

$$1. y = \frac{2}{x^2 + 1} + \frac{\sqrt[5]{x}}{x}$$

$$2. y = \frac{\sqrt{\operatorname{tg} 3x}}{x + 3}$$

$$3. y = x^2 \arccos 2x + \left(\frac{1}{\cos 2x}\right)^3$$

$$4. y = \frac{\log_5 3x}{5^{3x}}$$

$$5. y = \operatorname{arctg}^3(3 - x^3) \cdot \operatorname{ctg} \sqrt[3]{3x}$$

$$6. y = 6\sqrt[3]{e^{4x}} - 7^{\operatorname{tg} 4x}$$

$$7. y = 2^{\cos^2 x} 3^{\sin^2 x}$$

$$8. y = \sqrt[3]{\frac{x - 5}{\sqrt[5]{x^2 + 4}}}$$

$$9. y = \ln(1 - \arcsin^2 x) - \operatorname{arctg}(\sin x)$$

$$10. y = \lg^4\left(\cos\left(\operatorname{tg} \frac{1}{x^2}\right)\right)$$

11. по определению

$$y = \operatorname{tg} 2x$$

ВАРИАНТ 25

$$1. y = \frac{\sqrt{x} - 2x}{1 + \sqrt[4]{x}}$$

$$2. y = 2(-\sin^2 3x) + \cos^2 3x$$

$$3. y = \frac{3x^3}{\sqrt{\operatorname{arctg} x^3}}$$

$$4. y = \operatorname{ctg}^2(\operatorname{ctg} x) - 2\operatorname{tg}(\operatorname{tg}^2 x)$$

$$5. y = \ln\left(\cos\left(\operatorname{arctg}\left(\frac{e^x - e^{-5x}}{2}\right)\right)\right)$$

$$6. y = \frac{2^x \arcsin 2x}{\sqrt[3]{x^2}}$$

11. (по определению)

ВАРИАНТ 24

$$1. y = \sqrt[3]{x^5} - \frac{2}{\sqrt[5]{x^3}}$$

$$2. y = \sqrt[3]{\cos 3x} - \frac{\sin^3 3x^2}{3}$$

$$3. y = (x \arcsin 2x)^4 + \operatorname{tg} \sqrt{2x}$$

$$4. y = \frac{\operatorname{ctg} 5x \cdot \ln 5x}{5^x}$$

$$5. y = \frac{\arccos 2x}{\sqrt{1 - 4x^2}} + \frac{1}{2} \ln\left(\frac{1 - x}{1 + x}\right)$$

$$6. y = \operatorname{tg} \arcsin \lg(1 - 2^{\sqrt{x}})$$

$$7. y = \sqrt[3]{(x^2 - 6x)^2}$$

$$8. y = e^{-3x} \cdot \ln \operatorname{ctg} \frac{3}{x}$$

$$9. y = 7^{\sqrt{\frac{2-3x}{2+3x}}}$$

$$10. y = \cos 3x \cdot \sqrt{1 + xe^{\sqrt{x}}}$$

11. по определению

$$y = \frac{4}{2x^2 + 1}$$

ВАРИАНТ 26

$$1. y = \frac{-x^2 + 2x + 3}{x^3 - 2}$$

$$2. y = 3x^2 \sin x^2 + \cos^2 3x$$

$$3. y = \frac{\arcsin \sqrt[3]{x}}{2 - x^3}$$

$$4. y = (\cos x - 2^x)(e^x + \log_2 x)$$

$$5. y = 2^{\operatorname{tg} \frac{2}{x}}$$

$$6. y = \frac{e^{2x} + e^{-2x}}{e^{2x} - e^{-2x}}$$

$$7. y = \frac{x^6}{1+x^{12}} - \operatorname{arctg} x^6$$

$$8. y = \frac{\ln 5 \cdot \cos^2 x + \sin^2 x}{4^{2x}}$$

$$9. y = \log_3^3 4x \cdot \operatorname{ctg}^3 \ln x$$

$$10. y = 7^{-x^2} e^{-7x}$$

11. по определению

$$y = \frac{3}{\sqrt{x-1}}$$

ВАРИАНТ 27

$$1. y = \frac{\sqrt{x^2 + 7x + 5}}{x^2 - 3x}$$

$$2. y = x^2 \cdot \sin 2x \cdot \operatorname{arctg} x^2$$

$$3. y = \frac{\sqrt{x} \cos x}{2 - \operatorname{tg} 2x}$$

$$4. y = \sqrt{e^x - 1} - \operatorname{arctg} \sqrt{e^x - 1}$$

$$5. y = \frac{1}{\sqrt[3]{x}} \cdot (e^{x^2} - \operatorname{arctg} x^2)$$

$$6. y = 2 \frac{2 \sin^2 2x}{\cos 2x}$$

$$7. y = \operatorname{ctg} (\cos^2 (\operatorname{tg}^3 2x))$$

$$8. y = (\sqrt[4]{x^3} + \log_2 x)(e^{-x} - 2\sqrt{x})$$

$$9. y = \frac{\arccos^2 2x}{e^{\sqrt{x}}} + \sqrt{x + \sqrt{x}}$$

$$10. y = \ln \frac{x}{\sqrt[3]{x^3 - 1}}$$

11. по определению

$$y = \frac{4}{\sqrt{3-2x}}$$

ВАРИАНТ 29

$$1. y = \frac{\sqrt[3]{x} - 2}{x + \sqrt[3]{x^2 + 2}}$$

$$2. y = \frac{\sin x}{x} + \frac{x}{\cos x}$$

$$7. y = \log_3^3 \left(\frac{2 + \sin 3x}{2 - \sin 3x} \right)$$

$$8. y = \arccos \ln \operatorname{tg} 9^{\sqrt{x}}$$

$$9. y = \frac{2}{3} \operatorname{ctg}^3 x \cdot (6 \cos^2 2x + 7)$$

$$10. y = \operatorname{arctg} \sqrt{x^2 + 1} + \ln(\arccos \frac{1}{x})$$

11. по определению

$$y = \frac{4}{(2x-3)^2}$$

ВАРИАНТ 28

$$1. y = \frac{\sqrt[3]{x^2 - x}}{x + \sqrt[3]{x^2}}$$

$$2. y = \frac{x^3}{(\cos x - \sin x)^2}$$

$$3. y = \arcsin^2 3x \cdot \arccos^2 3x$$

$$4. y = \frac{e^{-2x} \operatorname{tg} 2x}{1 - \ln 2x}$$

$$5. y = \operatorname{arctg}(5^{-x}) + \operatorname{tg}(x^{-5})$$

$$6. y = 3^{2x} \operatorname{ctg} (\ln^2 x)$$

$$7. y = 2 \log_3 (\operatorname{tg} \frac{x}{8}) + \frac{1}{\cos^2 (x/8)}$$

$$8. y = \arcsin \frac{x^2 - 1}{x^2 + 1} + \sin^2 \frac{1}{x^2}$$

$$9. y = \sqrt{1-x^2} \ln \sqrt{\frac{1-x}{1+x}}$$

$$10. y = \lg \sin e^{\operatorname{ctg}(1/x)}$$

11. по определению

$$y = 3x^2 - x^3$$

ВАРИАНТ 30

$$1. y = \frac{1 - x^3 + x^2}{\sqrt{x}}$$

$$2. y = \frac{2 \cos^2 x}{3x + \sin 2x}$$

$$3. y = 2x^2 \arcsin x^2$$

$$4. y = (\ln x - \log_2 x) \sqrt[5]{x^2}$$

$$5. y = 10^{5 \sin x} + 5^{10 \cos x}$$

$$6. y = \frac{\lg(\cos^3 x)}{1+x^2} + \frac{1}{\cos^2 x}$$

$$7. y = \frac{1}{6} \operatorname{arctg} \frac{e^{3x} - e^{-3x}}{2}$$

$$8. y = \frac{1-x^2}{\operatorname{tg} x} e^{3x-1}$$

$$9. y = \ln(\sin \sqrt{\ln \sin(1/x)})$$

$$10. y = \lg \frac{x+a}{\sqrt{x^2+b^2}} - \frac{x^2}{a^2} + \frac{b^2}{x^2}$$

11. по определению

$$y = \frac{2}{\sqrt{3+4x}}$$

$$3. y = \operatorname{tg} 3x \cdot \sqrt[3]{\sin 3x}$$

$$4. y = ct^2(\operatorname{ctg} x) - \operatorname{tg}(\operatorname{tg}^2 x)$$

$$5. y = \arccos \sqrt{2x^2+1} \cdot \sqrt{1-2x^2}$$

$$6. y = 2^{1/x} (\sin^2 \sqrt{x} + \sqrt{x})$$

$$7. y = \sqrt{x + \sqrt{x + \sqrt{x+1}}}$$

$$8. y = 2e^{\sqrt{x}} (\sqrt{x} - 1)^2$$

$$9. y = x\sqrt{1+x^2} \cdot \sin x^2$$

$$10. y = \log_2 \sin \operatorname{tg} 3^{x^2}$$

11. по определению

$$y = \frac{4}{x^2 - x}$$