Math Test

Algebra & Calculus

16 variants — 10 problems

from Grade 6 to Year 1 university

May 23, 2026

Math Test

V01

Algebra & Calculus — *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 50 % of	$\frac{4}{5} + \frac{3}{4}$	$=$ _____
2	Solve the equation	$3x + 1 = 4x - 5$	$x =$ _____
3	Solve the system	$\begin{cases} 3x - 2y = -13 \\ x + 3y = 3 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - x - 6 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{x+1}{x+3} = 3$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x+13} = x + 1$	$x =$ _____
7	Solve the equation	$\sin x = \frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_2(3x - 1) = 3$	$x =$ _____
9	Find the local maximum of	$f(x) = x^3 - 6x^2 + 9x - 1$	$x =$ _____
10	Compute	$\int_0^3 \left(x^2 + 6x - 3\right)\, dx$	$=$ _____

Math Test

V02

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{1}{2} + \frac{5}{6}$	$=$ _____
2	Solve the equation	$7x + 4 = 6x + 10$	$x =$ _____
3	Solve the system	$\begin{cases} 2x + 3y = -2 \\ x + y = 0 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - 4x - 5 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{x - 17}{2x + 1} = -2$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 31} = x + 1$	$x =$ _____
7	Solve the equation	$\cos x = \frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_3(2x - 1) = 2$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 3x^2 - 24x + 1$	$x =$ _____
10	Compute	$\int_0^2 \left(6x^2 + 6x + 1\right)\, dx$	$=$ _____

Math Test

V03

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{3}{5} + \frac{1}{4}$	$=$ _____
2	Solve the equation	$2x + 4 = 4x - 6$	$x =$ _____
3	Solve the system	$\begin{cases} x + 4y = 2 \\ x + y = -1 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - 2x - 8 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{3x - 3}{2x + 1} = 3$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 31} = x + 1$	$x =$ _____
7	Solve the equation	$\cos x = \frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_2(x) = 2$	$x =$ _____
9	Find the local maximum of	$f(x) = x^3 - 3x^2 - 2$	$x =$ _____
10	Compute	$\int_{-1}^{1} \left(6x^2 - 2x + 1\right)\, dx$	$=$ _____

Math Test

V04

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{4}{5} + \frac{1}{6}$	$=$ _____
2	Solve the equation	$3x - 8 = 2x - 5$	$x =$ _____
3	Solve the system	$\begin{cases} 3x - y = 4 \\ 2x + 3y = 10 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$2x^2 + 6x - 20 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{5x - 11}{x + 2} = 2$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{2x + 35} = x$	$x =$ _____
7	Solve the equation	$\sin x = \frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_5(3x - 4) = 1$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 6x^2 + 9x - 4$	$x =$ _____
10	Compute	$\int_0^3 \left(2x^2 - 2x + 5\right)\, dx$	$=$ _____

Math Test

V05

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{1}{5} + \frac{5}{6}$	$=$ _____
2	Solve the equation	$7x + 3 = 2x + 33$	$x =$ _____
3	Solve the system	$\begin{cases} 2x - 4y = 8 \\ x - y = 3 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 + 3x - 10 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{2x - 12}{x - 2} = -2$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{3x + 13} = x + 1$	$x =$ _____
7	Solve the equation	$\cos x = \frac{\sqrt{3}}{2}$	$x =$ _____
8	Solve the equation	$\log_2(2x) = 2$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 + 3x^2 + 5$	$x =$ _____
10	Compute	$\int_1^3 \left(6x^2 - 2x - 2\right)\, dx$	$=$ _____

Math Test

V06

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{3}+\frac{1}{2}$	$=$ _____
2	Solve the equation	$5x-8=6x-11$	$x=$ _____
3	Solve the system	$\begin{cases}2x+3y=3\\3x+3y=0\end{cases}$	$x=$ _____ $y=$ _____
4	Solve the equation	$x^2+3x-10=0$	$x_1=$ _____ $x_2=$ _____
5	Solve, state the domain	$\frac{x-8}{x-2}=-2$	$x=$ _____ Domain: _____
6	Solve the equation	$\sqrt{2x+33}=x-1$	$x=$ _____
7	Solve the equation	$\sin x=\frac{1}{2}$	$x=$ _____
8	Solve the equation	$\log_5(3x+10)=2$	$x=$ _____
9	Find the local maximum of	$f(x)=x^3-3x^2-9x-4$	$x=$ _____
10	Compute	$\int_1^4 \left(3x^2+2x-3\right)\,dx$	$=$ _____

Math Test

V07

Algebra & Calculus — *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{3}{4} + \frac{2}{6}$	$=$ _____
2	Solve the equation	$5x + 7 = 6x + 4$	$x =$ _____
3	Solve the system	$\begin{cases} x + 2y = -3 \\ x - y = 3 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 + 3x - 10 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{4x - 15}{x - 2} = -3$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{2x + 48} = x$	$x =$ _____
7	Solve the equation	$\sin x = \frac{\sqrt{3}}{2}$	$x =$ _____
8	Solve the equation	$\log_2(3x - 14) = 2$	$x =$ _____
9	Find the local maximum of	$f(x) = x^3 - 27x - 2$	$x =$ _____
10	Compute	$\int_{-1}^{2} \left(3x^2 + 2x - 2\right)\, dx$	$=$ _____

Math Test

V08

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{4}{5} + \frac{3}{6}$	$=$ _____
2	Solve the equation	$7x + 1 = 5x + 11$	$x =$ _____
3	Solve the system	$\begin{cases} 3x - y = -7 \\ x - 3y = 3 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$2x^2 - 10x + 8 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{5x + 5}{x + 2} = 4$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{3x + 4} = x$	$x =$ _____
7	Solve the equation	$\sin x = -\frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_5(x) = 1$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 3x^2 - 1$	$x =$ _____
10	Compute	$\int_{-1}^{1} \left(3x^2 + 4x + 3\right)\, dx$	$=$ _____

Math Test

V09

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{5} + \frac{2}{4}$	$=$ _____
2	Solve the equation	$7x - 1 = 4x - 13$	$x =$ _____
3	Solve the system	$\begin{cases} 3x - 2y = -1 \\ x - 4y = -7 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - 4x - 5 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{4x + 20}{2x + 1} = 4$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 21} = x + 1$	$x =$ _____
7	Solve the equation	$\cos x = \frac{\sqrt{2}}{2}$	$x =$ _____
8	Solve the equation	$\log_2(3x - 4) = 3$	$x =$ _____
9	Find the local maximum of	$f(x) = x^3 - 6x^2 + 9x - 5$	$x =$ _____
10	Compute	$\int_1^4 \left(2x^2 + 5\right)\, dx$	$=$ _____

Math Test

V10

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{2} + \frac{1}{6}$	$=$ _____
2	Solve the equation	$3x + 9 = 4x + 12$	$x =$ _____
3	Solve the system	$\begin{cases} 3x + 3y = -9 \\ x + 3y = -5 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - 3x - 10 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{2x - 4}{x + 1} = 4$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{2x + 65} = x + 1$	$x =$ _____
7	Solve the equation	$\cos x = -\frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_3(2x - 3) = 1$	$x =$ _____
9	Find the local maximum of	$f(x) = x^3 - 3x + 5$	$x =$ _____
10	Compute	$\int_{-1}^{0} \left(6x^2 - 2x + 1\right)\, dx$	$=$ _____

Math Test

V11

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{2}{6} + \frac{2}{3}$	$=$ _____
2	Solve the equation	$7x + 8 = 3x$	$x =$ _____
3	Solve the system	$\begin{cases} 2x - 4y = -14 \\ x + y = 2 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$2x^2 - 4x - 16 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{x - 11}{x + 1} = -3$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 6} = x$	$x =$ _____
7	Solve the equation	$\sin x = \frac{\sqrt{3}}{2}$	$x =$ _____
8	Solve the equation	$\log_5(2x - 1) = 1$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 3x^2 - 1$	$x =$ _____
10	Compute	$\int_0^2 \left(3x^2 - 4x - 3\right)\, dx$	$=$ _____

Math Test

V12

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{4}{5} + \frac{2}{3}$	$=$ _____
2	Solve the equation	$5x - 6 = 4x - 4$	$x =$ _____
3	Solve the system	$\begin{cases} 4x - y = 17 \\ x - y = 5 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - x - 6 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{2x - 7}{x - 3} = 3$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 10} = x - 2$	$x =$ _____
7	Solve the equation	$\cos x = -\frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_2(x - 1) = 1$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 + 3x^2 - 9x + 1$	$x =$ _____
10	Compute	$\int_1^2 \left(3x^2 - 4x\right)\, dx$	$=$ _____

Math Test

V13

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 20 % of	$\frac{1}{3} + \frac{2}{4}$	$=$ _____
2	Solve the equation	$3x + 6 = 4x + 2$	$x =$ _____
3	Solve the system	$\begin{cases} x + 4y = -3 \\ 2x + y = 1 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 + x - 6 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{2x - 12}{x - 1} = 4$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{3x - 2} = x - 2$	$x =$ _____
7	Solve the equation	$\cos x = \frac{\sqrt{2}}{2}$	$x =$ _____
8	Solve the equation	$\log_3(2x + 5) = 2$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 3x^2 - 24x + 2$	$x =$ _____
10	Compute	$\int_{-1}^{2} \left(x^2 + 2x - 1\right)\, dx$	$=$ _____

Math Test

V14

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{3}{4} + \frac{4}{6}$	$=$ _____
2	Solve the equation	$5x + 3 = 3x + 11$	$x =$ _____
3	Solve the system	$\begin{cases} 4x + 4y = 8 \\ x - 3y = 10 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$2x^2 - 6x - 8 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{2x - 19}{x - 2} = -3$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{2x + 4} = x - 2$	$x =$ _____
7	Solve the equation	$\cos x = \frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_5(x + 3) = 1$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 6x^2 + 9x - 2$	$x =$ _____
10	Compute	$\int_0^3 \left(6x^2 - 3\right)\, dx$	$=$ _____

Math Test

V15

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{5}{6} + \frac{3}{4}$	$=$ _____
2	Solve the equation	$3x + 9 = 4x + 7$	$x =$ _____
3	Solve the system	$\begin{cases} 3x + y = 4 \\ 2x + 3y = -2 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$x^2 - 3x - 10 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{5x - 23}{x + 1} = -2$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 13} = x + 1$	$x =$ _____
7	Solve the equation	$\sin x = \frac{\sqrt{3}}{2}$	$x =$ _____
8	Solve the equation	$\log_3(3x - 12) = 1$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 + 3x^2 - 3$	$x =$ _____
10	Compute	$\int_{-1}^{1} \left(6x^2 + 3\right)\, dx$	$=$ _____

Math Test

V16

Algebra & Calculus *45 minutes — 10 problems*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{2} + \frac{2}{4}$	$=$ _____
2	Solve the equation	$5x + 2 = 6x$	$x =$ _____
3	Solve the system	$\begin{cases} 2x + 3y = 15 \\ 3x + 4y = 21 \end{cases}$	$x =$ _____ $y =$ _____
4	Solve the equation	$2x^2 + 2x - 12 = 0$	$x_1 =$ _____ $x_2 =$ _____
5	Solve, state the domain	$\frac{2x + 8}{x + 3} = 4$	$x =$ _____ Domain: _____
6	Solve the equation	$\sqrt{x + 12} = x$	$x =$ _____
7	Solve the equation	$\cos x = \frac{1}{2}$	$x =$ _____
8	Solve the equation	$\log_3(3x + 9) = 3$	$x =$ _____
9	Find the local minimum of	$f(x) = x^3 - 3x^2 - 9x + 1$	$x =$ _____
10	Compute	$\int_{-1}^{1} \left(6x^2 + 2x + 5\right)\, dx$	$=$ _____

Teacher’s Answer Key

VO1

Key *variant 1 of 16*

#	Instructions	Problem	Answer
1	Find $50\,\%$ of	$\frac{4}{5}+\frac{3}{4}$	$\frac{31}{40}$
2	Solve the equation	$3x+1=4x-5$	$x=6$
3	Solve the system	$\begin{cases}3x-2y=-13\\x+3y=3\end{cases}$	$x=-3,\ y=2$
4	Solve the equation	$x^2-x-6=0$	$x_1=-2,\ x_2=3$
5	Solve, state the domain	$\frac{x+1}{x+3}=3$	$x=-4,\ x\neq -3$
6	Solve the equation	$\sqrt{x+13}=x+1$	$x=3$
7	Solve the equation	$\sin x=\frac{1}{2}$	$x=\frac{\pi}{6}+2\pi n;\ x=\frac{5\pi}{6}+2\pi n$
8	Solve the equation	$\log_2(3x-1)=3$	$x=3$
9	Find the local maximum of	$f(x)=x^3-6x^2+9x-1$	$x=1$
10	Compute	$\int_0^3 \left(x^2+6x-3\right)\,dx$	27

Teacher’s Answer Key

V02

Key *variant 2 of 16*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{1}{2}+\frac{5}{6}$	$\frac{1}{3}$
2	Solve the equation	$7x+4=6x+10$	$x=6$
3	Solve the system	$\begin{cases}2x+3y=-2\\x+y=0\end{cases}$	$x=2,\ y=-2$
4	Solve the equation	$x^2-4x-5=0$	$x_1=-1,\ x_2=5$
5	Solve, state the domain	$\frac{x-17}{2x+1}=-2$	$x=3,\ x\neq\frac{-1}{2}$
6	Solve the equation	$\sqrt{x+31}=x+1$	$x=5$
7	Solve the equation	$\cos x=\frac{1}{2}$	$x=\pm\frac{\pi}{3}+2\pi n$
8	Solve the equation	$\log_3(2x-1)=2$	$x=5$
9	Find the local minimum of	$f(x)=x^3-3x^2-24x+1$	$x=4$
10	Compute	$\int_0^2 \left(6x^2+6x+1\right)\,dx$	30

Teacher’s Answer Key

V03

Key *variant 3 of 16*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{3}{5}+\frac{1}{4}$	$\frac{17}{80}$
2	Solve the equation	$2x+4=4x-6$	$x=5$
3	Solve the system	$\begin{cases} x+4y=2 \\ x+y=-1 \end{cases}$	$x=-2,\ y=1$
4	Solve the equation	$x^2-2x-8=0$	$x_1=-2,\ x_2=4$
5	Solve, state the domain	$\frac{3x-3}{2x+1}=3$	$x=-2,\ x\neq\frac{-1}{2}$
6	Solve the equation	$\sqrt{x+31}=x+1$	$x=5$
7	Solve the equation	$\cos x=\frac{1}{2}$	$x=\pm\frac{\pi}{3}+2\pi n$
8	Solve the equation	$\log_2(x)=2$	$x=4$
9	Find the local maximum of	$f(x)=x^3-3x^2-2$	$x=0$
10	Compute	$\int_{-1}^{1}\left(6x^2-2x+1\right)\,dx$	6

Teacher’s Answer Key

V04

Key *variant 4 of 16*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{4}{5}+\frac{1}{6}$	$\frac{29}{120}$
2	Solve the equation	$3x-8=2x-5$	$x=3$
3	Solve the system	$\begin{cases}3x-y=4\\2x+3y=10\end{cases}$	$x=2,\ y=2$
4	Solve the equation	$2x^2+6x-20=0$	$x_1=-5,\ x_2=2$
5	Solve, state the domain	$\frac{5x-11}{x+2}=2$	$x=5,\ x\neq -2$
6	Solve the equation	$\sqrt{2x+35}=x$	$x=7$
7	Solve the equation	$\sin x=\frac{1}{2}$	$x=\frac{\pi}{6}+2\pi n;\ x=\frac{5\pi}{6}+2\pi n$
8	Solve the equation	$\log_5(3x-4)=1$	$x=3$
9	Find the local minimum of	$f(x)=x^3-6x^2+9x-4$	$x=3$
10	Compute	$\int_0^3 \left(2x^2-2x+5\right)\,dx$	24

Teacher’s Answer Key

V05

Key *variant 5 of 16*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{1}{5}+\frac{5}{6}$	$\frac{31}{120}$
2	Solve the equation	$7x+3=2x+33$	$x=6$
3	Solve the system	$\begin{cases}2x-4y=8\\x-y=3\end{cases}$	$x=2,\ y=-1$
4	Solve the equation	$x^2+3x-10=0$	$x_1=-5,\ x_2=2$
5	Solve, state the domain	$\frac{2x-12}{x-2}=-2$	$x=4,\ x\neq 2$
6	Solve the equation	$\sqrt{3x+13}=x+1$	$x=4$
7	Solve the equation	$\cos x=\frac{\sqrt{3}}{2}$	$x=\pm\frac{\pi}{6}+2\pi n$
8	Solve the equation	$\log_2(2x)=2$	$x=2$
9	Find the local minimum of	$f(x)=x^3+3x^2+5$	$x=0$
10	Compute	$\int_1^3 \left(6x^2-2x-2\right)\,dx$	40

Teacher’s Answer Key

V06

Key *variant 6 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{3}+\frac{1}{2}$	$\frac{5}{8}$
2	Solve the equation	$5x-8=6x-11$	$x=3$
3	Solve the system	$\begin{cases}2x+3y=3\\3x+3y=0\end{cases}$	$x=-3,\ y=3$
4	Solve the equation	$x^2+3x-10=0$	$x_1=-5,\ x_2=2$
5	Solve, state the domain	$\frac{x-8}{x-2}=-2$	$x=4,\ x\neq 2$
6	Solve the equation	$\sqrt{2x+33}=x-1$	$x=8$
7	Solve the equation	$\sin x=\frac{1}{2}$	$x=\frac{\pi}{6}+2\pi n;\ x=\frac{5\pi}{6}+2\pi n$
8	Solve the equation	$\log_5(3x+10)=2$	$x=5$
9	Find the local maximum of	$f(x)=x^3-3x^2-9x-4$	$x=-1$
10	Compute	$\int_1^4 \left(3x^2+2x-3\right)\,dx$	69

Teacher’s Answer Key

V07

Key *variant 7 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{3}{4}+\frac{2}{6}$	$\frac{13}{16}$
2	Solve the equation	$5x+7=6x+4$	$x=3$
3	Solve the system	$\begin{cases} x+2y=-3 \\ x-y=3 \end{cases}$	$x=1,\ y=-2$
4	Solve the equation	$x^2+3x-10=0$	$x_1=-5,\ x_2=2$
5	Solve, state the domain	$\frac{4x-15}{x-2}=-3$	$x=3,\ x\neq 2$
6	Solve the equation	$\sqrt{2x+48}=x$	$x=8$
7	Solve the equation	$\sin x=\frac{\sqrt{3}}{2}$	$x=\frac{\pi}{3}+2\pi n;\ x=\frac{2\pi}{3}+2\pi n$
8	Solve the equation	$\log_2(3x-14)=2$	$x=6$
9	Find the local maximum of	$f(x)=x^3-27x-2$	$x=-3$
10	Compute	$\int_{-1}^{2}\left(3x^2+2x-2\right)\,dx$	6

Teacher’s Answer Key

V08

Key *variant 8 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{4}{5}+\frac{3}{6}$	$\frac{39}{40}$
2	Solve the equation	$7x+1=5x+11$	$x=5$
3	Solve the system	$\begin{cases}3x-y=-7\\x-3y=3\end{cases}$	$x=-3,\ y=-2$
4	Solve the equation	$2x^2-10x+8=0$	$x_1=1,\ x_2=4$
5	Solve, state the domain	$\frac{5x+5}{x+2}=4$	$x=3,\ x\neq -2$
6	Solve the equation	$\sqrt{3x+4}=x$	$x=4$
7	Solve the equation	$\sin x=-\frac{1}{2}$	$x=-\frac{\pi}{6}+2\pi n;\ x=\frac{7\pi}{6}+2\pi n$
8	Solve the equation	$\log_5(x)=1$	$x=5$
9	Find the local minimum of	$f(x)=x^3-3x^2-1$	$x=2$
10	Compute	$\int_{-1}^{1}\left(3x^2+4x+3\right)\,dx$	8

Teacher’s Answer Key

V09

Key *variant 9 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{5}+\frac{2}{4}$	$\frac{21}{40}$
2	Solve the equation	$7x-1=4x-13$	$x=-4$
3	Solve the system	$\begin{cases}3x-2y=-1\\x-4y=-7\end{cases}$	$x=1,\ y=2$
4	Solve the equation	$x^2-4x-5=0$	$x_1=-1,\ x_2=5$
5	Solve, state the domain	$\frac{4x+20}{2x+1}=4$	$x=4,\ x\neq\frac{-1}{2}$
6	Solve the equation	$\sqrt{x+21}=x+1$	$x=4$
7	Solve the equation	$\cos x=\frac{\sqrt{2}}{2}$	$x=\pm\frac{\pi}{4}+2\pi n$
8	Solve the equation	$\log_2(3x-4)=3$	$x=4$
9	Find the local maximum of	$f(x)=x^3-6x^2+9x-5$	$x=1$
10	Compute	$\int_1^4 \left(2x^2+5\right)\,dx$	57

Teacher’s Answer Key

V10

Key *variant 10 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{2}+\frac{1}{6}$	$\frac{1}{2}$
2	Solve the equation	$3x+9=4x+12$	$x=-3$
3	Solve the system	$\begin{cases}3x+3y=-9\\x+3y=-5\end{cases}$	$x=-2,\ y=-1$
4	Solve the equation	$x^2-3x-10=0$	$x_1=-2,\ x_2=5$
5	Solve, state the domain	$\frac{2x-4}{x+1}=4$	$x=-4,\ x\neq -1$
6	Solve the equation	$\sqrt{2x+65}=x+1$	$x=8$
7	Solve the equation	$\cos x=-\frac{1}{2}$	$x=\pm\frac{2\pi}{3}+2\pi n$
8	Solve the equation	$\log_3(2x-3)=1$	$x=3$
9	Find the local maximum of	$f(x)=x^3-3x+5$	$x=-1$
10	Compute	$\int_{-1}^{0}\left(6x^2-2x+1\right)\,dx$	4

Teacher’s Answer Key

V11

Key *variant 11 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{2}{6}+\frac{2}{3}$	$\frac{3}{4}$
2	Solve the equation	$7x+8=3x$	$x=-2$
3	Solve the system	$\begin{cases}2x-4y=-14\\x+y=2\end{cases}$	$x=-1,\ y=3$
4	Solve the equation	$2x^2-4x-16=0$	$x_1=-2,\ x_2=4$
5	Solve, state the domain	$\frac{x-11}{x+1}=-3$	$x=2,\ x\neq -1$
6	Solve the equation	$\sqrt{x+6}=x$	$x=3$
7	Solve the equation	$\sin x=\frac{\sqrt{3}}{2}$	$x=\frac{\pi}{3}+2\pi n;\ x=\frac{2\pi}{3}+2\pi n$
8	Solve the equation	$\log_5(2x-1)=1$	$x=3$
9	Find the local minimum of	$f(x)=x^3-3x^2-1$	$x=2$
10	Compute	$\int_0^2 \left(3x^2-4x-3\right)\,dx$	-6

Teacher’s Answer Key

V12

Key *variant 12 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{4}{5}+\frac{2}{3}$	$\frac{11}{10}$
2	Solve the equation	$5x-6=4x-4$	$x=2$
3	Solve the system	$\begin{cases}4x-y=17\\x-y=5\end{cases}$	$x=4,\ y=-1$
4	Solve the equation	$x^2-x-6=0$	$x_1=-2,\ x_2=3$
5	Solve, state the domain	$\frac{2x-7}{x-3}=3$	$x=2,\ x\neq 3$
6	Solve the equation	$\sqrt{x+10}=x-2$	$x=6$
7	Solve the equation	$\cos x=-\frac{1}{2}$	$x=\pm\frac{2\pi}{3}+2\pi n$
8	Solve the equation	$\log_2(x-1)=1$	$x=3$
9	Find the local minimum of	$f(x)=x^3+3x^2-9x+1$	$x=1$
10	Compute	$\int_1^2 \left(3x^2-4x\right)\,dx$	1

Teacher’s Answer Key

V13

Key *variant 13 of 16*

#	Instructions	Problem	Answer
1	Find 20 % of	$\frac{1}{3}+\frac{2}{4}$	$\frac{1}{6}$
2	Solve the equation	$3x+6=4x+2$	$x=4$
3	Solve the system	$\begin{cases} x+4y=-3 \\ 2x+y=1 \end{cases}$	$x=1,\ y=-1$
4	Solve the equation	$x^2+x-6=0$	$x_1=-3,\ x_2=2$
5	Solve, state the domain	$\frac{2x-12}{x-1}=4$	$x=-4,\ x\neq 1$
6	Solve the equation	$\sqrt{3x-2}=x-2$	$x=6$
7	Solve the equation	$\cos x=\frac{\sqrt{2}}{2}$	$x=\pm\frac{\pi}{4}+2\pi n$
8	Solve the equation	$\log_3(2x+5)=2$	$x=2$
9	Find the local minimum of	$f(x)=x^3-3x^2-24x+2$	$x=4$
10	Compute	$\int_{-1}^{2}\left(x^2+2x-1\right)\,dx$	3

Teacher’s Answer Key

V14

Key *variant 14 of 16*

#	Instructions	Problem	Answer
1	Find 25 % of	$\frac{3}{4}+\frac{4}{6}$	$\frac{17}{48}$
2	Solve the equation	$5x+3=3x+11$	$x=4$
3	Solve the system	$\begin{cases}4x+4y=8\\x-3y=10\end{cases}$	$x=4,\ y=-2$
4	Solve the equation	$2x^2-6x-8=0$	$x_1=-1,\ x_2=4$
5	Solve, state the domain	$\frac{2x-19}{x-2}=-3$	$x=5,\ x\neq 2$
6	Solve the equation	$\sqrt{2x+4}=x-2$	$x=6$
7	Solve the equation	$\cos x=\frac{1}{2}$	$x=\pm\frac{\pi}{3}+2\pi n$
8	Solve the equation	$\log_5(x+3)=1$	$x=2$
9	Find the local minimum of	$f(x)=x^3-6x^2+9x-2$	$x=3$
10	Compute	$\int_0^3 \left(6x^2-3\right)\,dx$	45

Teacher’s Answer Key

V15

Key *variant 15 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{5}{6}+\frac{3}{4}$	$\frac{19}{16}$
2	Solve the equation	$3x+9=4x+7$	$x=2$
3	Solve the system	$\begin{cases}3x+y=4\\2x+3y=-2\end{cases}$	$x=2,\ y=-2$
4	Solve the equation	$x^2-3x-10=0$	$x_1=-2,\ x_2=5$
5	Solve, state the domain	$\frac{5x-23}{x+1}=-2$	$x=3,\ x\neq -1$
6	Solve the equation	$\sqrt{x+13}=x+1$	$x=3$
7	Solve the equation	$\sin x=\frac{\sqrt{3}}{2}$	$x=\frac{\pi}{3}+2\pi n;\ x=\frac{2\pi}{3}+2\pi n$
8	Solve the equation	$\log_3(3x-12)=1$	$x=5$
9	Find the local minimum of	$f(x)=x^3+3x^2-3$	$x=0$
10	Compute	$\int_{-1}^{1}\left(6x^2+3\right)\,dx$	10

Teacher’s Answer Key

V16

Key *variant 16 of 16*

#	Instructions	Problem	Answer
1	Find 75 % of	$\frac{1}{2}+\frac{2}{4}$	$\frac{3}{4}$
2	Solve the equation	$5x+2=6x$	$x=2$
3	Solve the system	$\begin{cases}2x+3y=15\\3x+4y=21\end{cases}$	$x=3,\ y=3$
4	Solve the equation	$2x^2+2x-12=0$	$x_1=-3,\ x_2=2$
5	Solve, state the domain	$\frac{2x+8}{x+3}=4$	$x=-2,\ x\neq -3$
6	Solve the equation	$\sqrt{x+12}=x$	$x=4$
7	Solve the equation	$\cos x=\frac{1}{2}$	$x=\pm\frac{\pi}{3}+2\pi n$
8	Solve the equation	$\log_3(3x+9)=3$	$x=6$
9	Find the local minimum of	$f(x)=x^3-3x^2-9x+1$	$x=3$
10	Compute	$\int_{-1}^{1}\left(6x^2+2x+5\right)\,dx$	14