Definite Integration … Set 1

Evaluate the following definite integrals:

46. $\int_0^1 2x\,dx$

47. $\int_2^7 3\,dv$

48. $\int_{-1}^0 (x-2)\,dx$

49. $\int_2^5 (-3v+4)\,dv$

50. $\int_{-1}^1 (t^2-2)\,dt$

51. $\int_0^3 (3x^2+x-2)\,dx$

52. $\int_0^1 (2t-1)^2\,dt$

53. $\int_{-1}^1 (t^3-9t)\,dt$

54. $\int_1^2 \left(\frac{3}{x^2}-1\right)dx$

55. $\int_{-2}^{-1} \left(u-\frac{1}{u^2}\right)du$

56. $\int_1^4 \frac{u-2}{\sqrt{u}}\,du$

57. $\int_{-3}^3 v^{1/3}\,dv$

58. $\int_{-1}^1 (\sqrt[3]{t}-2)\,dt$

59. $\int_1^8 \sqrt{\frac{2}{x}}\,dx$

60. $\int_0^1 \frac{x-\sqrt{x}}{3}\,dx$

Definite Integration … Set 1

Answers

Definite integrals:

46. 1

47. 15

48. $-\frac{5}{2}$

49. $-\frac{39}{2}$

50. $-\frac{10}{3}$

51. $\frac{51}{2}$

52. $\frac{1}{3}$

53. 0

54. $\frac{1}{2}$

55. -2

56. $\frac{2}{3}$

57. 0

58. -4

59. $2(4-\sqrt{2})$

60. $-\frac{1}{18}$

Definite Integration … Set 1

61. $\int_0^2 (2-t)\sqrt{t}\,dt$

62. $\int_{-1}^0 (t^{1/3} - t^{2/3})\,dt$

63. $\int_{-8}^{-1} \frac{x - x^2}{2\sqrt[3]{x}}\,dx$

64. $\int_0^3 |2x-3|\,dx$

65. $\int_0^4 |x^2 - 4x + 3|\,dx$

66. $\int_0^{\pi} (1 + \sin x)\,dx$

67. $\int_0^{\pi/4} \frac{1 - \sin^2\theta}{\cos^2\theta}\,d\theta$

68. $\int_{-\pi/6}^{\pi/6} \sec^2 x\,dx$

69. $\int_{\pi/4}^{\pi/2} (2 - \csc^2 x)\,dx$

70. $\int_{-\pi/3}^{\pi/3} 4\sec\theta\tan\theta\,d\theta$

71. $\int_{-\pi/2}^{\pi/2} (2t + \cos t)\,dt$

72. $\int_1^e \left(2x + \frac{1}{x}\right)dx$

73. $\int_1^5 \frac{x+1}{x}\,dx$

74. $\int_0^2 (e^x + 6)\,dx$

75. $\int_0^3 (t - e^t)\,dt$

76. $\int_{-1}^1 (e^\theta + \sin\theta)\,d\theta$

77. $\int_e^{2e} \left(\cos x - \frac{1}{x}\right)dx$

Definite Integration … Set 1

Answers

Definite integrals:

61. $\frac{16\sqrt{2}}{15}$

62. $\frac{-27}{20}$

63. $\frac{1523}{20}$

64. $\frac{9}{2}$

65. 4

66. $\pi + 2$

67. $\frac{\pi}{4}$

68. $\frac{2}{\sqrt{3}}$

69. $\frac{\pi}{2} - 1$

70. 0

71. 2

72. e^2

73. $4 + \ln 5$

74. $e^2 + 11$

75. $\frac{11}{2} - e^3$

76. $e - e^{-1}$

77. $\sin(2e) - \sin(e) - \ln(2)$