

SAT Math Practice Test: Full Answer Key with Brief Solutions

Section A: No Calculator (Answers & Brief Solutions)

- 1) $x = 6$ — $3x + 7 = 25 \rightarrow 3x = 18 \rightarrow x = 6$.
- 2) $y = 10$ — $2y - 5 = 15 \rightarrow 2y = 20 \rightarrow y = 10$.
- 3) 1 — slope = $(7 - 3)/(6 - 2) = 4/4 = 1$.
- 4) 3 — $f(2) = 2(4) - 3(2) + 1 = 8 - 6 + 1 = 3$.
- 5) 21 — $\sqrt{x + 4} = 5 \rightarrow x + 4 = 25 \rightarrow x = 21$.
- 6) $x + 3$ — $(x^2 - 9)/(x - 3) = (x - 3)(x + 3)/(x - 3) = x + 3$ ($x \neq 3$).
- 7) $x = \pm 2$ — $2x^2 - 8 = 0 \rightarrow x^2 = 4 \rightarrow x = \pm 2$.
- 8) Yes — $6^2 + 8^2 = 36 + 64 = 100 = 10^2$.
- 9) $x = 7$ — Add: $(x + y) + (x - y) = 14 \rightarrow 2x = 14 \rightarrow x = 7$.
- 10) 11 — $(5 + 7 + 9 + x)/4 = 8 \rightarrow x = 11$.
- 11) $-1/2$ — Perpendicular slope to 2 is $-1/2$.
- 12) $y = (5/3)x$ — From $5x = 3y$.
- 13) $x < 8$ — $2x - 7 < 9 \rightarrow 2x < 16 \rightarrow x < 8$.
- 14) 4 — width = area/length = $24/6 = 4$.
- 15) 12 — $|-12| = 12$.
- 16) $y = -3x + 5$ — Same slope -3 through $(0, 5)$.
- 17) $x = 2$ or -5 — Zeros of $(x - 2)(x + 5)$.
- 18) 0.75 — $3/4 = 0.75$.
- 19) 153.86 — $\pi r^2 = 3.14 \times 49 = 153.86$.
- 20) 11 — Middle of 5 numbers listed.

Section B: Calculator (Answers & Brief Solutions)

- 21) \$37.80 — $50 \times 0.70 = 35$; $35 \times 1.08 = 37.8$.
- 22) 5 hours — Speed = 60 mph; $300/60 = 5$.
- 23) 13 — $\sqrt{5^2 + 12^2} = \sqrt{169} = 13$.
- 24) $a=2$, $b=-4$, $c=4$ — From $c=4$; $a+b=-2$; $2a+b=0 \rightarrow a=2$, $b=-4$.
- 25) 6 — $0.5 \times 8 + 2 = 6$.
- 26) 100 — $\log(x)=2 \rightarrow x = 10^2$.
- 27) 86.25 — Mean = $(75+85+90+95)/4 = 345/4$.
- 28) 11,025 — $10,000 \times 1.05^2$.
- 29) $x = 3$ or -2 — Zeros of $(x-3)(x+2)$.
- 30) $\sqrt{52} \approx 7.21$ — $\sqrt{((4-(-2))^2 + (5-1)^2)} = \sqrt{6^2 + 4^2} = \sqrt{52}$.
- 31) $3/8$ — $C(3,2)/2^3 = 3/8$.
- 32) 282.6 — $\pi r^2 h = 3.14 \times 9 \times 10$.
- 33) $x = 3$ — $2^{\wedge}(x+1) = 16 = 2^{\wedge}4 \rightarrow x = 3$.
- 34) 17 — 6 nums sum 72; 5 nums sum 55 \rightarrow removed 17.
- 35) $x = 8$ — $5x - 7 = 3x + 9 \rightarrow 2x = 16$.
- 36) 0.8 — $\cos \theta = \sqrt{1 - 0.6^2} = 0.8$.
- 37) 150 miles — 60×2.5 .
- 38) 12 — Other side $\sqrt{13^2 - 5^2} = \sqrt{144}$.
- 39) $x^{\wedge}5$ — Add exponents.
- 40) $x = 4$ — $4x + 2 = 18 \rightarrow 4x = 16$.

- 41) \$15,000 — 200×75 .
42) 48 — 0.40×120 .
43) $x = 12$ — $x/3 + 5 = 9 \rightarrow x/3 = 4$.
44) $y = 2x$ — Slope 2; through (1,2).
45) -7 — $f(-3) = 2(-3) - 1$.
46) 5/12 — Favorable 5 of 12.
47) 28 — Side $\sqrt{49} = 7 \rightarrow$ perimeter 28.
48) $x = 6$ or -1 — $2x - 5 = \pm 7$.
49) $x = \pm 11$ — $x^2 = 121$.
50) 24 — $12/0.5$.
51) $x = 5$ — $3x + 4 = 19 \rightarrow 3x = 15$.
52) 7 — $(n-2) \times 180 = 900 \rightarrow n = 7$.
53) $y = 4x - 1$ — Slope 4; y-intercept -1.
54) 12 — $6^2 - 4 \times 6 = 36 - 24$.
55) 21 — Sum 80; known 59 $\rightarrow 21$.
56) $120 + 0.20m$ — 3 days at \$40 + \$0.20 per mile.
57) 904.32 — $(4/3)\pi r^3 = (4/3) \times 3.14 \times 216$.
58) $3/5 = 0.6$ — $\tan = 3/4 \rightarrow 3-4-5$ triangle $\rightarrow \sin = 3/5$.

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