

TMT First 20 ACT Prep V4

- Solve $-2n - 10 < -1$ [82]

$\frac{-2n}{-2} < \frac{-9}{-2}$ Divide by a negative so switch the sign $n > \frac{9}{2} = 4\frac{1}{2}$ also
- Multiply $(x - 9)^2$ [211]

$(x-9)(x-9) = x^2 - 9x - 9x + 81 = x^2 - 18x + 81$
- Find the slope if given two points, $(-7, 2)$ and $(6, 4)$ [210]

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 2}{6 - (-7)} = \frac{2}{13}$
- Evaluate $f(x) = -2x^2 - x - 1$ if $x = -2$ [110]

$-2(-2)^2 - (-2) - 1 = -2(4) + 2 - 1 = -8 + 2 - 1 = -6 - 1 = -7$
- Simplify $\frac{1}{4} \cdot \frac{7}{6}$ [42]

$\frac{7}{24}$
- Simplify $\frac{-5 \pm 5\sqrt{2}}{15}$ [214]

$\frac{5(-1 \pm \sqrt{2})}{5 \cdot 3} = \frac{-1 \pm \sqrt{2}}{3}$
- Multiply $(2x - 9)(x + 3)$ [60]

$2x^2 + 6x - 9x - 27 = 2x^2 - 3x - 27$
- Solve. Show 3+ steps of work [89]

$-5 - (x - 2) = 5x + 9$
 $-5 - x + 2 = 5x + 9$
 $-x - 3 = 5x + 9$
 $+x \quad +x$
 $-3 = 6x + 9$
 $-9 \quad -9$
 $-12 = 6x$
 $\frac{-12}{6} = \frac{6x}{6} \Rightarrow x = -2$
- Simplify $\frac{\frac{2}{7}}{\frac{3}{14}}$ [50]

$\frac{2}{7} \cdot \frac{14}{3} = \frac{4}{3} = 1\frac{1}{3}$ also
- Factor out a GCF $3x^2 - 12x + 9bx$ [58]

$3x(x - 4 + 3b)$
- Simplify $(6a^7b^4)^2 \cdot b^4$ [206]

$36a^{14}b^8 \cdot b^4 = 36a^{14}b^{12}$
- Find the following: $2y = 8x - 6$ [135]

Slope: 4
Y-Intercept: $(0, -3)$
 $y = 4x - 3$
- Solve $(3x + 5)(x - 2) = 0$ [85]

$3x + 5 = 0 \Rightarrow x = -\frac{5}{3}$ also
 $x - 2 = 0 \Rightarrow x = 2$
- Solve $|x - 1| = 10$ [84]

$x - 1 = 10 \Rightarrow x = 11$
 $x - 1 = -10 \Rightarrow x = -9$
- Solve $x^2 - 2x - 6 = 4$ [88]

$x^2 - 2x - 10 = 0$ complete factor so...
 $x = \frac{2 \pm \sqrt{4 - 4(1)(-10)}}{2 \cdot 1} = \frac{2 \pm \sqrt{44}}{2}$
- Simplify $\frac{(x-9)(x+2)}{x^2-4}$ [209]

$\frac{(x-9)(x+2)}{(x-2)(x+2)} = \frac{x-9}{x-2}$
- Simplify $\frac{3}{7} + \frac{5}{2}$ [39]

$\frac{2 \cdot 3}{2 \cdot 7} + \frac{5 \cdot 7}{2 \cdot 7} = \frac{6}{14} + \frac{35}{14} = \frac{41}{14} = 2\frac{13}{14}$ also
- Factor $x^2 - 7x - 8$ [53]

$(x-8)(x+1)$
 $x = \frac{7 \pm \sqrt{49 - 4(1)(-8)}}{2} = \frac{7 \pm \sqrt{85}}{2}$
- Simplify $\frac{18x^3}{20x^7}$ [74]

$\frac{2 \cdot 9 \cdot x^3}{2 \cdot 10 \cdot x^3 \cdot x^4} = \frac{9}{10x^4}$
- Simplify (PEMDAS) $2(5 - 2(x + 3))$ [212]

$2(5 - 2x - 6) = 2(-2x - 1) = -4x - 2$