No Calculator - 20 Minutes Timed
Find videos on each *[skill]* at www.AlgebraNinja.com Name: KEY Hour:____

TMT First 20 ACT Prep V1

1. Multiply $(x+5)^2$ [211]

$(x+5)(x+5)$
$x^2+10x+25$

2. Factor x^2-7x-8 [53]

$(x-8)(x+1)$

3. Solve $(3x+1)(x-4)=0$ [85]

$3x+1=0$ $x-4=0$
$3x=-1$ $x=4$
$x=-\frac{1}{3}$

4. Simplify $\frac{2}{3}+\frac{4}{5}$ [39]

$\frac{2\cdot5}{3\cdot5}+\frac{4\cdot3}{5\cdot3}=\frac{22}{15}=1\frac{7}{15}$ also

5. Simplify $\frac{2}{3}\cdot\frac{3}{5}$ [42] $\frac{2}{5}$

6. Find the following: $2y=4x+6$ [135]

$\frac{2y}{2}=\frac{4x}{2}+\frac{6}{2}$

Slope: 2

Y-Intercept: (0,3) $y=2x+3$

7. Multiply $(2x-5)(x+4)$ [60]

$2x^2+8x-5x-20$
$2x^2+3x-20$

8. Simplify $\frac{5x^3}{15x^1}$ [74] $\frac{1\cdot5\cdot x\cdot x\cdot x}{5\cdot3\cdot x}=\frac{x^2}{3}$

9. Simplify $\frac{\frac{3}{4}}{\frac{4}{9}}$ [50] $\frac{3}{4}\cdot\frac{9}{4}=\frac{27}{16}=\frac{9\cdot3}{4\cdot4}=1\frac{11}{16}$ also

10. Simplify(PEMDAS) $2(3+2(x+1))$ [212]

$2(3+2x+2)$
$2(2x+5)=4x+10$

11. Simplify $(5a^3b^4)^2\cdot b^2$ [206]

$25a^6b^8b^2=25a^6b^{10}$

12. Simplify $\frac{-3\pm3\sqrt{2}}{3}$ [214]

factor top $\frac{3(-1\pm\sqrt{2})}{3}=-1\pm\sqrt{2}$

13. Solve $|x+3|=7$ [84]

$x+3=7$ $x+3=-7$
$-3\ -3$ $-3\ -3$
$x=4$ $x=-10$

14. solve $-2n+1>-5$ [82]

$-1\ \ -1$
$\frac{-2n}{-2}>\frac{-6}{-2}$ ← Divide by neg - Switch Sign!
$n<3$

15. Solve $x^2+x-1=2$ [88]

$-2\ \ -2$
$x^2+x-3=0$ ← Can't factor so..

$x=\frac{-1\pm\sqrt{1^2-4(1)(-3)}}{2\cdot1}$
$x=\frac{-1\pm\sqrt{13}}{2}$

16. Simplify $\frac{(x-5)(x+7)}{x^2-25}$ [209]

$\frac{(x-5)(x+7)}{(x+5)(x-5)}=\frac{x+7}{x+5}$

17. Evaluate $f(x)=2x^2-6$ *if* $x=-1$ [110]

$2(-1)^2-6$
$2\cdot1-6$
$2-6$
-4

18. Find the slope if given two points, (1,-2) and (4,8)[210]

$m=\frac{y_2-y_1}{x_2-x_1}=\frac{8--2}{4-1}=\frac{10}{3}=3\frac{1}{3}$ also

19. Factor out the gcf $2x^2+4ax-2x$ [58]

$2x(x+2a-1)$

20. Solve. Show 3+ steps of work [89]

$3-(2x+5)=4x+7$

$3-2x-5=4x+7$

$-2x-2=4x+7$
$+2x\ \ +2x$

$-2=6x+7$
$-7\ \ -7$

$\frac{-9}{6}=\frac{6x}{6}$

$x=\frac{-9}{6}=\frac{-3\cdot3}{2\cdot3}=-\frac{3}{2}$ $=-1.5$ also

Copyright Two Minute Teacher, LLC 2019. All rights reserved.