AFm REVIEW for Exam

1. Solve: $\log 3 + \log(x-5) = \log 30$ $x = 15$

2. Solve: $\ln(2x-1) = 4$ $x = 26.8$

3. Solve: $10 + e^{2x} = 13$ $x = .55$

4. Solve: $\log_3 5 - \log_3 x = \log_3 4$ $x = 1.25$

5. Simplify: $\dfrac{2x^2+5x-3}{4x^2+11x-3}$ $\dfrac{(2x-1)}{(4x-1)}$ $= 6/5$

6. Simplify: $\dfrac{3p-15}{p^2-4p-5}$ $\dfrac{3\cancel{(p-5)}}{\cancel{(p-5)}(p+1)}$ $\dfrac{3}{p+1}$

7. Given $a = 13$, $b = 17$, AND $c = 20$. FIND the largest angle. $\angle C = 82.5°$

8. Two planes leave an airport at the same time. After one hour they are 189 km away from each other. One plane traveled 170 km and the other plane traveled 165 km. What is the angle from where they took off from the airport? (tenths place) 68.7°

9. FIND the AREA of a triangle with $a = 20$, $b = 24$, AND $c = 25$.

10. Evaluate: $\displaystyle\sum_{n=4}^{10} 3n-8$ 91

(11) Evaluate: $\sum_{n=1}^{10} 2(3)^n$ 177144

(12) At Tucson Raceway Park, your horse, Soon-to-be-Glue, has a probability of 1/20 of coming in first place, a probability of 1/10 of coming in second place, and a probability of ¼ of coming in third place. First place pays $4,500 to the winner, second place $3,500 and third place $1,500. Is it worthwhile to enter the race if it costs $1,000? E.V. = $-50

(13) Find the 12th and 82nd term of the sequence below.

43, 40, 37, 34, 31, 28, ___, ___, ___, ...

$a_{12} = 10$

$a_{82} = -200$

(14) Simplify: $5\sqrt{45} - 3\sqrt{20}$ $= 9\sqrt{5}$

(15) Simplify: $(4\sqrt{2} - 7)(5\sqrt{2} + 3)$ $= 19 - 23\sqrt{2}$

(16) Simplify: $\dfrac{3-\sqrt{2}}{4+\sqrt{5}}$ $\dfrac{12 - 3\sqrt{5} - 4\sqrt{2} + \sqrt{10}}{11}$

(17) Solve: $\log_6(3x^2 - 2x) = \log_6 8$ $\{2, -4/3\}$

(18) Solve: $2(x-4) + 2x = 5x - 20$ $x = 12$

(19) Simplify: $\dfrac{a^2 - 25}{a^2 + 3a - 10}$ $\dfrac{(a-5)\cancel{(a+5)}}{\cancel{(a+5)}(a-2)}$ $\dfrac{a-5}{a-2}$

(20) Find the common ratio for the sequence below.

6, ___, ___, ___, ___, -192

$a_n = a_1 \cdot r^{n-1}$

$a_n = 6 \cdot r^5$ $r = -2$

$-192 = 6 \cdot r^5$

Exam Review

① $3(x-5)=30$

$3x-15=30$

$\quad +15$

$3x=45$

$x=15$

⑤ $2x^2+5x-3$

$\frac{(2x-1)\cancel{(x+3)}}{\cancel{(x+3)}(4x-1)}$

$\frac{(2x-1)}{(4x-1)}$

$-6 \quad 5$

$6 \quad -1$

$(x-\frac{1}{2})$

$(x+\frac{6}{2})$

$-12 \quad 11$

$12 \quad -1$

$(x+\frac{12}{4})$

$(x-\frac{1}{4})$

② $\ln_e(2x-1)=e^4$

$2x-1=e^4+1$

$\quad +1$

$\frac{2x}{2}=\frac{e^4+1}{2}$

$x=$ 27.8

③ $10+e^{2x}=13$

$\ln e^{2x}=\ln 3$

$2x=\frac{\ln 3}{2}$

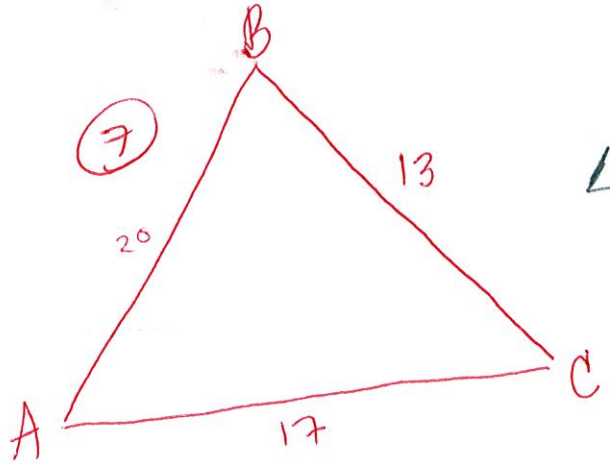
$x=.55$

④ $\frac{5}{x}=\frac{4}{1}$

$4x=5$

$x=1.25$

⑦

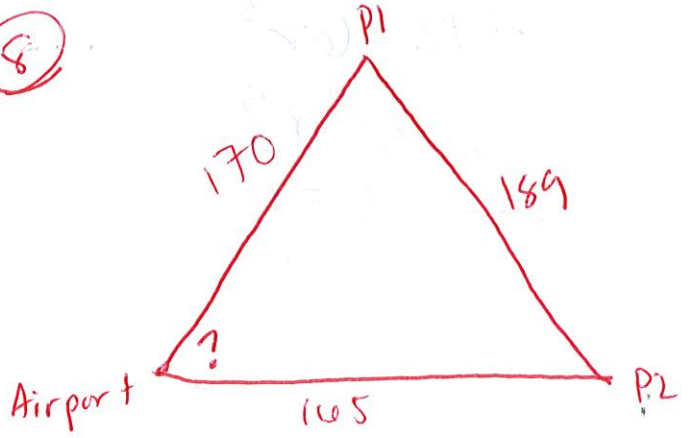


$\angle C=82.5$

$20^2=17^2+13^2-2(17)(13)\cos C$

$-58=-442\cos C$

(8)

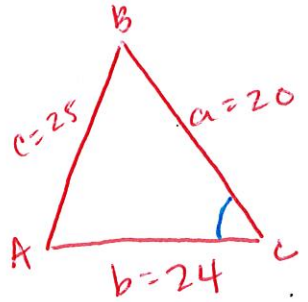


$189^2 = 165^2 - 170^2 - 2(165)(170)\cos A$

$-20404 = -56100 \cos A$

$68.7°$

(9)



$25^2 = 24^2 + 20^2 - 2(20)(24)\cos C$

$-351 = -960 \cos C$

$68.6° = C$

(10) $\sum_{n=4}^{10} 3n - 8$

$3(4)-8 = 4$

$3(5)-8 = 7$

$3(6)-8 = 10$

$3(7)-8 = 13$

$3(8)-8 = 16$

$3(9)-8 = 19$

$3(10)-8 = 22$

91

$\frac{7}{2}(4+22)$ ✓

(11) $\sum_{n=1}^{10} 2(3)^n$

$S_n = a_1\left(\frac{1-r^n}{1-r}\right)$

$6\left(\frac{1-3^{10}}{1-3}\right)$

177144

(12)

	1st	2nd	3rd	
Prob	1/20	1/10	1/4	1
$	4500	3500	1500	-1000

E.V. = $-50

No, Don't play

(13) $a_1 = 43$

$d = -3$

$a_{12} = 43 + (12-1)(-3)$

$a_{12} = 10$

$a_{82} = 43 + (82-1)(-3)$

$a_{82} = -200$

(14) $5\sqrt{45} - 3\sqrt{20}$

$\hat{a}\ 5 \qquad \hat{4}5$

$5 \cdot 3\sqrt{5} - 3 \cdot 2\sqrt{5}$

$15\sqrt{5} - 6\sqrt{5} = 9\sqrt{5}$

(20) $-192 = 6 \cdot r^5$

$-32 = r^5$

$-2 = r$

(15) $(4\sqrt{2} - 7)(5\sqrt{2} + 3)$

$20\sqrt{4} + 12\sqrt{2} - 35\sqrt{2} - 21$

$20 \cdot 2 + 12\sqrt{2} - 35\sqrt{2} - 21$

$\underline{40} + 12\sqrt{2} - 35\sqrt{2} \underline{-21}$

$19 - 23\sqrt{2}$

(16) $\dfrac{(3 - \sqrt{2})}{(4 + \sqrt{5})} \cdot \dfrac{(4 - \sqrt{5})}{(4 - \sqrt{5})}$ $\qquad \dfrac{12 - 3\sqrt{5} - 4\sqrt{2} + \sqrt{10}}{16 - 4\sqrt{5} + 4\sqrt{5} - \sqrt{25}}$

$16 - 5$

$\dfrac{12 - 3\sqrt{5} - 4\sqrt{2} + \sqrt{10}}{11}$

(17) $3x^2 - 2x = 8$

$3x^2 - 2x - 8 = 0$

$-24 \mid -2$

$-6 \quad 4$

$(x - \frac{6}{3})(x + \frac{4}{3}) = 0$

$(x - 2)(3x + 4) = 0$

$\{2, -4/3\}$

(18)

$2x - 8 + 2x = 5x - 20$

$4x - 8 = 5x - 20$

$+20$

$12 = x$

(19) $\dfrac{(a-5)(a+5)}{(a+5)(a-2)} = \dfrac{a-5}{a-2}$