MTH 127 Spring 2020 Mrs. Bledsoe Name_____

FINAL EXAM Sp 2020

Date_____

Do this exam, documenting your answer choices carefully. Enter your answer choices into the Microsoft Word document that is called "MTH 127 Final Exam Answer Sheet - Spring 2020" and is a separate attachment to the same message that brought this exam to you. Turn in the answer sheet via livegrades message attachment or email attachment. Email it to mbledsoe@k12.wv.us and enter "MTH 127 FINAL EXAM - Sp2020: (enter your name here)" as the subject of the message. You may use your notes and book but no other living, breathing entity - and not the internet or apps on your devices other than the one used to open the test, the answer sheet, and possibly your calculator ap. Remember everything is due by (before) midnight on Thursday, April 30, 2020. ANY ITEMS TURNED IN VIA HIGH SCHOOL DROP OFF MUST BE TURNED IN BY 11 AM THURSDAY, APRIL 30, 2020. I wish each of your the best luck - happiness and fortune. - Now get started and good luck!

Simplify each expression. Your answer should contain only positive exponents.

1) $-\dfrac{x}{\left(-x^3y^3\cdot x^{-2}y^{-5}\right)^0}$

A) $\dfrac{y^{19}}{x^{25}}$ B) $-x^3y$

C) $-\dfrac{1}{xy^5}$ D) $-x$

2) $\left(\dfrac{mn^3\cdot -m^0n^5}{-mn}\right)^4$

A) n^{28} B) $-\dfrac{n^{12}}{m^{34}}$

C) 1 D) $-\dfrac{1}{m^{14}n^{19}}$

Simplify each expression.

3) $(5a^4-a^3-4)+(2a^4+5+5a^3)$

A) $7a^4-a^3+1$
B) $7a^4-a^3+9$
C) $7a^4-a^3-7$
D) $7a^4+4a^3+1$

Evaluate each function at the given value.

4) $f(a)=2a^3-7a-4$ at $a=-2$

A) –4 B) –6
C) –2 D) –11

Factor each completely.

5) $56xy-40x-7y^4+5y^3$

A) $y(7-y^2)(8x+5)$
B) $(8x-y^3)(7y-5)$
C) $y(8x-5)(7-y^2)$
D) $(8x+y^3)(7y-5)$

6) $2n^3-6n^2-36n$

A) $2n(n-6)(n+3)$
B) $2n(n+9)(n-2)$
C) $2(n-6)(n-3)$
D) $2n(n+6)(n+3)$

MTH 127 FINAL Exam Spring 2020

7) $x^5 + 6x^3 + 8x = 0$

A) $x(x^2 + 2)(3x^2 + 4) = 0$
B) $x(x^2 + 4)^2 = 0$
C) $x(x^2 + 3)(x^2 + 4) = 0$
D) $x(x^2 + 2)(x^2 + 4) = 0$

8) $x^4 + 8x^2 + 7 = 0$

A) $(x^2 + 3)(x^2 + 7) = 0$
B) $(x^2 + 1)(x^2 + 7) = 0$
C) $(x^2 + 1)(x^2 + 8) = 0$
D) $(x^2 + 2)(x^2 + 7) = 0$

Simplify.

9) $(2 + 4i) - (7 - 7i)$

A) $-3 + 15i$
B) $-5 + 11i$
C) $3 + 4i$
D) $-5 + 3i$

10) $(-2i)(4 + i) + 5(5 - 5i)$

A) $27 - 33i$
B) $27 - 17i$
C) $-23 - 33i$
D) $12 - 8i$

11) $\dfrac{-10 - 5i}{4 + 10i}$

A) $\dfrac{-10 - 5i}{16}$
B) $\dfrac{-9 - 5i}{14}$
C) $\dfrac{-45 + 40i}{58}$
D) $\dfrac{-16 + 40i}{29}$

12) $\dfrac{7}{5 + 6\sqrt{3}}$

A) $\dfrac{-35 + 42\sqrt{2}}{47}$
B) $\dfrac{-25 + 30\sqrt{3}}{83}$
C) $\dfrac{-40 + 48\sqrt{3}}{83}$
D) $\dfrac{-35 + 42\sqrt{3}}{83}$

13) $\dfrac{2\sqrt{7}}{\sqrt{10}}$

A) $\dfrac{2\sqrt{15}}{5}$
B) $\dfrac{2\sqrt{7}}{3}$
C) $\dfrac{\sqrt{70}}{2}$
D) $\dfrac{\sqrt{70}}{5}$

14) $\dfrac{8 + 6\sqrt{2}}{3 + \sqrt{7}}$

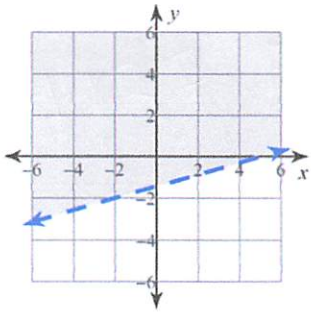
A) $\dfrac{32 - 8\sqrt{7} + 36\sqrt{5} - 9\sqrt{35}}{9}$
B) $21 - 7\sqrt{7}$
C) $12 - 4\sqrt{7} + 9\sqrt{2} - 3\sqrt{14}$
D) $12 - 4\sqrt{7} + 6\sqrt{2} - 2\sqrt{14}$

MTH 127 FINAL EXAM Spring 2020

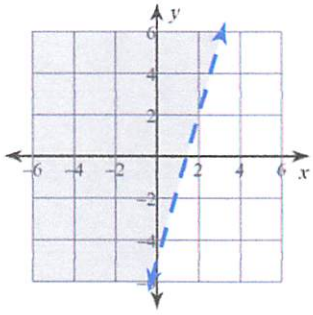
Sketch the graph of each linear inequality.

15) $7x - 2y > 10$

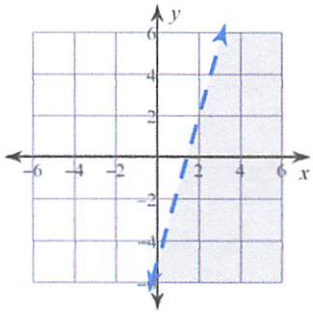
A)



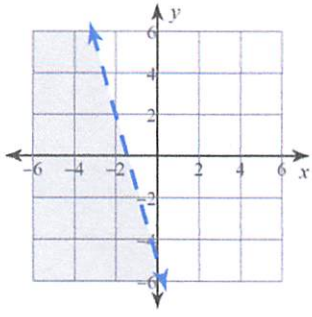
B)



C)



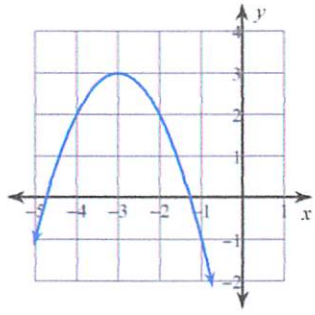
D)



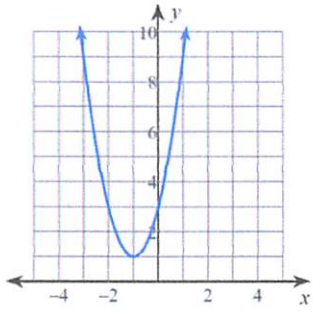
Sketch the graph of each function.

16) $y = (x+3)^2 + 2$

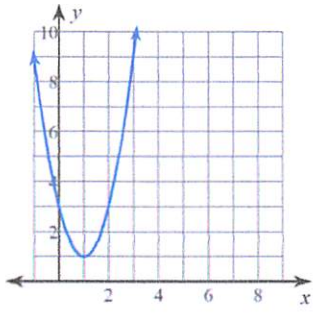
A)



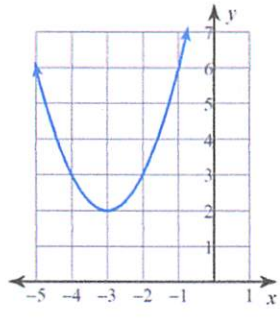
B)



C)



D)



State if the given functions are inverses.

17) $f(x) = \dfrac{-9+7x}{3}$

$g(x) = \dfrac{3x+9}{7}$

A) Yes B) No

18) $f(x) = \dfrac{2+\sqrt[5]{16x}}{2}$

$g(x) = 2(x-1)^5$

A) No B) Yes

MTH 127 FINAL EXAM Spring 2020

Find the inverse of each function.

19) $f(x) = -\frac{1}{2}x - \frac{1}{2}$

A) $f^{-1}(x) = \frac{2}{3}x + \frac{4}{3}$

B) $f^{-1}(x) = -2x + 3$

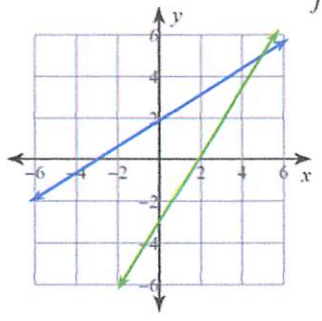
C) $f^{-1}(x) = \frac{-x - 1}{3}$

D) $f^{-1}(x) = -2x - 1$

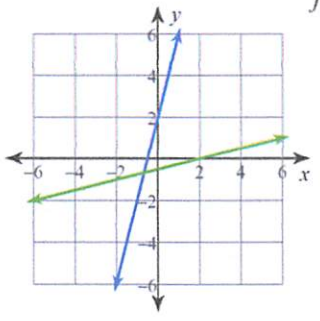
Find the inverse of each function. Then graph the function and its inverse.

20) $f(x) = 4x + 2$

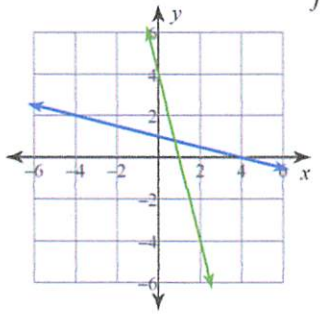
A) $f^{-1}(x) = \frac{-15 + 8x}{5}$



B) $f^{-1}(x) = \frac{x - 2}{4}$



C) $f^{-1}(x) = -4x + 4$



D) $f^{-1}(x) = -x - 3$