NAME:_____

A2.A.8: Apply the rules of exponents to simplify expressions involving negative and/or fractional exponents

1. 060912b, P.I. A2.A.8
Which expression is equivalent to $(\sqrt{a^2 b^{\frac{1}{2}}})^{-1}$?

[A] $-ab^2$ [B] $a^{-2}b^{-\frac{1}{2}}$

[C] $\frac{1}{ab^{\frac{1}{4}}}$ [D] $-ab^{\frac{1}{4}}$

2. 010617b, P.I. A2.A.8

When simplified, the expression $(\sqrt[3]{m^4})(m^{-\frac{1}{2}})$ is equivalent to

[A] $\sqrt[6]{m^5}$ [B] $\sqrt[5]{m^{-4}}$

[C] $\sqrt[3]{m^{-2}}$ [D] $\sqrt[4]{m^3}$

3. 060602b, P.I. A2.A.8

If $f(x) = x^{-\frac{3}{2}}$, then $f(\frac{1}{4})$ is equal to

[A] $-\frac{1}{8}$ [B] 8 [C] -2 [D] -4

4. 010824b, P.I. A2.A.8

Simplify the expression $(m^6)^{-\frac{2}{3}}$ and write your answer using a positive exponent.

A2.A.8: Apply the rules of exponents to simplify expressions involving negative and/or fractional exponents

[1] C

[2] A

[3] B

[2] $\frac{1}{m^4}$ or $(\frac{1}{m})^4$, and appropriate work is shown.
[1] Appropriate work is shown, but one computational error is made,
or [1] Appropriate work is shown, but one conceptual error is made.
or [1] Appropriate work is shown, but the answer is expressed with a negative exponent, such as m^{-4}.
[1] $\frac{1}{m^4}$ or $(\frac{1}{m})^4$, but no work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously
[4] incorrect procedure.