

Lesson 20 Practice Problems

1. A local office supply store charges \$18 to set up their business card printing machine with the design and \$0.15 in materials per business card to print. Select **all** equations that could represent an expression for the average cost $A(x)$ of printing a batch of x business cards.

A. $A(x) = \frac{18+x}{0.15}$

B. $A(x) = \frac{18+0.15x}{x}$

C. $A(x) = \frac{0.15+18x}{x}$

D. $A(x) = \frac{0.15}{18+x}$

E. $A(x) = \frac{18+0.15x}{18+x}$

F. $A(x) = \frac{18}{x} + 0.15$

2. The school band is in charge of a new set of uniforms made with a new logo. A local business charges \$140 to set up the logo with the design and \$0.25 in materials per logo printed. The function $C(x) = \frac{140+0.25x}{x}$ represents the average cost per logo if x uniforms are printed by this business.

- What is the average cost per uniform to get the logo printed on 25 uniforms?
- What is the average cost per uniform to get the logo printed on 100 uniforms?
- How many uniforms should be printed to have an average cost of \$1 per logo?
- What will happen to the price as the number of uniforms printed increases?

3. Two competing sports equipment suppliers sell footballs at different prices. Supplier A charges \$85 in shipping, and charges \$2.59 per football. Supplier B charges \$50 shipping, and charges \$4.29 per football. A school wants to buy 40 balls. Which supplier has the lowest average cost per ball?

4. What is one point of intersection between the graphs of the functions $f(x) = (x + 6)(x + 2)$ and $g(x) = x + 6$?

- A. (0, 6)
- B. (-1, 5)
- C. (-2, 0)
- D. (-4, -4)

(From Unit 2, Lesson 11.)

5. The graph of a polynomial $f(x) = (5x - 3)(x + 4)(x + a)$ has x -intercepts at -4 , $\frac{3}{5}$, and 6 . What is the value of a ?

(From Unit 2, Lesson 15.)

6. The function $f(x) = \frac{3x-4}{x+6}$ can be rewritten in the form $f(x) = 3 + \frac{-22}{x+6}$. What is the end behavior of $y = f(x)$?

(From Unit 2, Lesson 19.)