

8.8A Write One Variable Equations or Inequalities

Some questions (c) 2017 by The Texas Education Agency.

Some questions (c) 2017 by Region 10 Educational Service Center.

Some questions (c) 2017 by TEKS Resource System.

1 Two eighth-grade classes are selling raffle tickets to raise money.

- One class is selling tickets for \$2.50 each and has already raised \$350.
- The other class is selling tickets for \$3.00 each and has already raised \$225.

Which equation can be used to find t , the number of tickets each class needs to sell so that the total amount raised is the same for both classes?

- A** $2.50t + 350 = 3t + 225$
- B** $3t + 350 = 2.50t + 225$
- C** $350t + 2.50 = 225t + 3$
- D** Not here

2 Eddie compared prices of two auto-rental agencies for the use of a mid-size auto for one week. Right Price Auto charged a flat fee of \$386 plus 20¢ per mile driven. EconoCar charged a flat fee of \$344 plus 35¢ per mile driven. Which equation should he use to determine the distance in miles, m , that would make the total charges of both auto-rental agencies equal?

- A** $386 + 20m = 344 + 35m$
- B** $344 + 20m = 386 + 35m$
- C** $386 + .20m = 344 + .35m$
- D** $344 + .20m = 386 + .35m$

3 John and Jane went to a bakery to get cookies for a party. Jane bought x cookies that were \$3 each. John bought x cookies that were on sale for \$1 each plus he got a small cake for \$10.00. If John and Jane both spent the same amount of money, which equation shows how many cookies, x , they purchased.

- A** $3x = x + 10$
- B** $x = 3x + 10$
- C** $3x + x = 10$
- D** $3x + x + 10 = 0$

- 4 Jerry has a new job and earns a salary of \$45,000. Victoria has a new job and earns a salary of \$54,000. Jerry will receive a salary increase of \$2,500 per year, and Victoria will receive a salary increase of \$1,500 per year.

Which equation can be used to find x , the number of years it will take Jerry to earn the same salary as Victoria?

- A $45,000x + 2,500x = 54,000x + 1,500x$
B $45,000x + 2,500 = 54,000x + 1,500$
C $45,000 + 2,500x = 54,000 + 1,500x$
D $45,000x + 2,500x = 54,000x + 1,500$
- 5 Jacelyn's company required an initial investment of \$2,125 for starting costs and sells construction toys for \$49.99 each. Richie's company required no initial investment and sells construction toys online for \$39.95 each. Which equation can be used to find t , the number of construction toys that must be bought so that the profit for Jacelyn's company and Richie's company is the same?
- A $49.99t + 2125 = 39.95t$
B $39.95t - 2125 = 49.99t$
C $-2075.01t = 39.95t$
D $49.99t - 2125 = 39.95t$
- 6 Roxy and Randy are selling pancake breakfast plates to raise money for a class trip. Roxy is selling plates for \$5.00 and has already raised \$175. Randy is selling plates for \$3.50 and has already raised \$250. Which equation can be used to find p , the number of plates that Roxy and Randy must sell so that the total amount raised is the same for both Roxy and Randy?
- A $5p + 250 = 3.50p + 175$
B $250p + 3.50 = 175p + 5$
C $3.50p + 250 = 5p + 175$
D Not here
- 7 Tricia and Melanie are both saving money for their summer vacations. They began saving at the same time. Tricia started with \$10.25 and adds \$5.15 to her savings every month. Melanie did not have a starting amount but adds \$10.25 to her savings every month. Which equation could be used to determine how many months, m , it will take before Tricia and Melanie both have saved the same amount of money?
- A $5.15m + 10.25 = 10.25m$
B $10.25m + 5.15 = 10.25m$
C $10.25m + 10.25 = 5.15m$
D $10.25m - 5.15 = 10.25m$

8 A local bakery has a daily operating cost of \$1800 plus a cost of \$10 per cake they make. If a cake sells for \$15, which equation could be used to determine the minimum number of cakes, c , they must sell each day to earn a profit?

A $15c < 1800 + 10c$

B $15c > 1800 + 10c$

C $10c < 1800 + 15c$

D $10c > 1800 + 15c$

9 Helen had \$330 in her savings account when Vince opened a savings account with zero dollars.

- Helen deposited \$30 into her account each week for x weeks.
- Vince deposited \$50 into his account each week for x weeks.
- The accounts did not earn interest.

Which inequality represents this situation when the amount of money in Helen's account was greater than the amount of money in Vince's account?

- A** $30x < 330 + 50x$
- B** $50x > 330 + 30x$
- C** $30x > 330 + 50x$
- D** $50x < 330 + 30x$

10 Veronica is ordering trophies for her school. Company P charges \$3.50 for each trophy and a one-time engraving fee of \$25. Company R charges \$7.50 for each trophy and a one-time engraving fee of \$17. Which inequality can be used to find x , the minimum number of trophies that can be ordered so that the total charge at Company P is less than the total charge at Company R?

- A** $3.5 + 25x < 7.5 + 17x$
- B** $3.5 + 25x > 7.5 + 17x$
- C** $3.5x + 25 < 7.5x + 17$
- D** $3.5x + 25 > 7.5x + 17$

11 Renting video games from Store S costs \$2.50 per game plus a monthly fee of \$5.00. Renting video games from Store T costs \$5.00 per game with no monthly fee. The monthly cost to rent video games depends on the number of video games, v , rented. Which inequality represents the situation when the monthly cost at Store S is less than the monthly cost at Store T?

- A** $2.5v + 5 < 5v$
- B** $2.5v + 5 > 5v$
- C** $7.5v < 5v$
- D** $7.5v > 5v$

12 Jack and Tim are racing remote-controlled cars. Jack's car travels 3.5 feet per second, while Tim's car travels 5.25 feet per second. Because Jack's car is slower, Tim gave Jack a 10-foot head start. Which inequality could be used to determine after how many seconds, s , Tim's car will be ahead of Jack's car?

- A** $3.5s > 5.25s + 10$
- B** $5.25s > 3.5s + 10$
- C** $3.5s + 10 > 5.25s$
- D** $3.55s - 10 < 5.25s$