Math 084 W2010 Quiz 5 Preparation sections 3.1 to 3.2 v01
Dressler

Name_____

Solve.

1) How can $70,000 be invested, part at 4% annual interest and the remainder at 10% annual interest, so that the interest earned by the two accounts is equal at the end of the year?

2) How can $42,000 be invested, part at 4% annual interest and the remainder at 10% annual interest, so that the interest earned by the two accounts is equal at the end of the year?

3) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual interest, and the remainder in a mutual fund that paid 11% annual interest. If his total interest for that year was $700, how much did Kevin invest in the mutual fund?

4) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual interest, and the remainder in a mutual fund that paid 11% annual interest. If his total interest for that year was $900, how much did Kevin invest in the mutual fund?

5) Melissa invested a sum of money at 3% annual interest. She invested three times that sum at 5% annual interest. If her total yearly interest from both investments was $7200, how much was invested at 3%?

6) Melissa invested a sum of money at 3% annual interest. She invested three times that sum at 5% annual interest. If her total yearly interest from both investments was $5400, how much was invested at 3%?

7) How much pure acid should be mixed with 8 gallons of a 50% acid solution in order to get an 80% acid solution?

8) How much pure acid should be mixed with 7 gallons of a 50% acid solution in order to get an 80% acid solution?

9) A chemist needs 10 liters of a 50% salt solution. All she has available is a 20% salt solution and a 70% salt solution. How much of each of the two solutions should she mix to obtain her desired solution?

10) A chemist needs 12 liters of a 50% salt solution. All she has available is a 20% salt solution and a 70% salt solution. How much of each of the two solutions should she mix to obtain her desired solution?

11) The owners of a candy store want to sell, for $6 per pound, a mixture of chocolate–covered raisins, which usually sells for $3 per pound, and chocolate–covered macadamia nuts, which usually sells for $8 per pound. They have a 40–pound barrel of the raisins. How many pounds of the nuts should they mix with the barrel of raisins so that they hit their target value of $6 per pound for the mixture?

12) The owners of a candy store want to sell, for $6 per pound, a mixture of chocolate–covered raisins, which usually sells for $3 per pound, and chocolate–covered macadamia nuts, which usually sells for $8 per pound. They have a 50–pound barrel of the raisins. How many pounds of the nuts should they mix with the barrel of raisins so that they hit their target value of $6 per pound for the mixture?

13) A motorcycle traveling at 50 miles per hour overtakes a car traveling at 30 miles per hour that had a three–hour head start. How far from the starting point are the two vehicles?

14) A motorcycle traveling at 60 miles per hour overtakes a car traveling at 30 miles per hour that had a three–hour head start. How far from the starting point are the two vehicles?

15) Linda and Dave leave simultaneously from the same starting point biking in opposite directions. Linda bikes at 5 miles per hour and Dave bikes at 10 miles per hour. How long will it be until they are 24 miles apart from each other?

16) Linda and Dave leave simultaneously from the same starting point biking in opposite directions. Linda bikes at 6 miles per hour and Dave bikes at 10 miles per hour. How long will it be until they are 20 miles apart from each other?

17) Jeff starts driving at 45 miles per hour from the same point that Lauren starts driving at 50 miles per hour. They drive in opposite directions, and Lauren has a half–hour head start. How long will they be able to talk on their cell phones that have a 480–mile range?

18) Jeff starts driving at 45 miles per hour from the same point that Lauren starts driving at 40 miles per hour. They drive in opposite directions, and Lauren has a half–hour head start. How long will they be able to talk on their cell phones that have a 370–mile range?

Solve the proportion.

19) $\frac{x}{36} = \frac{5}{18}$

20) $\frac{x}{22} = \frac{9}{11}$

21) $\frac{1}{x} = \frac{2}{9}$

22) $\frac{1}{x} = \frac{2}{7}$

23) $\frac{2x + 1}{x} = \frac{3}{2}$

24) $\frac{2x + 3}{x} = \frac{3}{2}$

25) $\frac{1}{x + 3} = \frac{3}{5x}$

26) $\frac{1}{x + 10} = \frac{3}{5x}$

Solve.

27) The ratio of a quarterback's completed passes to attempted passes is 7 to 10. If he attempted 20 passes, find how many passes he completed. Round to the nearest whole number if necessary.

28) The ratio of a quarterback's completed passes to attempted passes is 4 to 5. If he attempted 10 passes, find how many passes he completed. Round to the nearest whole number if necessary.

29) The ratio of a quarterback's completed passes to attempted passes is 4 to 9. If he attempted 36 passes, find how many passes he completed. Round to the nearest whole number if necessary.

30) The ratio of a basketball player's completed free throws to attempted free throws is 6 to 7. If she completed 30 free throws, find how many free throws she attempted. Round to the nearest whole number if necessary.

31) The ratio of a basketball player's completed free throws to attempted free throws is 2 to 5. If she completed 8 free throws, find how many free throws she attempted. Round to the nearest whole number if necessary.

32) The ratio of a basketball player's completed free throws to attempted free throws is 2 to 3. If she completed 8 free throws, find how many free throws she attempted. Round to the nearest whole number if necessary.

33) It takes Winnie 30 minutes to type and spell check 14 pages of a manuscript. Find how long it takes her to type and spell check 21 pages. Round answers to the nearest whole number if necessary.

34) It takes Mary Alice 14 minutes to type and spell check 10 pages of a manuscript. Find how long it takes her to type and spell check 75 pages. Round answers to the nearest whole number if necessary.

35) It takes Kathy 18 minutes to type and spell check 14 pages of a manuscript. Find how long it takes her to type and spell check 49 pages. Round answers to the nearest whole number if necessary.

36) It takes Mike 20 minutes to type and spell check 14 pages. Find how many pages he can type and spell check in 2.5 hours. Round answers to the nearest tenth if necessary.

37) It takes Mark 24 minutes to type and spell check 10 pages. Find how many pages he can type and spell check in 1.5 hours. Round answers to the nearest tenth if necessary.

38) It takes Ryan 30 minutes to type and spell check 16 pages. Find how many pages he can type and spell check in 2.5 hours. Round answers to the nearest tenth if necessary.

1) $50,000 invested at 4%; $20,000 invested at 10%
2) $30,000 invested at 4%; $12,000 invested at 10%
3) $2000
4) $6000
5) $40,000
6) $30,000
7) 12 gal
8) 10.5 gal
9) 4 liters of the 20% solution; 6 liters of the 70% solution
10) 4.8 liters of the 20% solution; 7.2 liters of the 70% solution
11) 60 lbs.
12) 75 lbs.
13) 225 miles
14) 180 miles
15) 1.6 hours
16) 1.3 hours
17) 4.8 hours
18) 4.1 hours
19) {10}
20) {18}
21) $\left\{\frac{9}{2}\right\}$
22) $\left\{\frac{7}{2}\right\}$
23) {–2}
24) {–6}
25) $\left\{\frac{9}{2}\right\}$
26) $\{15\}$
27) 14 passes
28) 8 passes
29) 16 passes
30) 35 free throws
31) 20 free throws
32) 12 free throws
33) 45 minutes
34) 105 minutes
35) 63 minutes
36) 105 pages
37) 37.5 pages
38) 80 pages