Name: Namane

Quiz Review

Write an algebraic expression for each phrase.

1. 7 times a number, increased by 8

$7x + 8$

2. 9 less than twice a number

$2x - 9$

3. Five times the quantity of a number decreased by 7

$5(x - 7)$

4. Three times the sum of 8 and a number.

$3(8 + x)$

Find the unit rate.

5. It costs $10.00 for 4 boxes of cereal, how much is it per box?

$\$2.50$ / box

6. Joey pays $30 for 14 gallons of gas, how much does it cost per gallon?

$\$2.14$ / gallon

7. $18.50 for 5 pounds of meat, how much does it cost per pound?

$\$3.70$ / lb

Solve.

8. $-5(4x - 2) = -2(3 + 6x)$

$-20x + 10 = -6 - 12x$

$-8x = -16$

$x = 2$

9. $8(1 + 5x) + 5 = 13 + 5x$

$8 + 40x + 5 = 13 + 5x$

$35x = 0$

$x = 0$

10. $-8(-8x - 6) = -6x - 22$

$64x + 48 = -6x - 22$

$70x = -70$

$x = -1$

11. $-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$

$-5 + 25x - 40x - 10 = -4x - 8x$

$-15 - 15x = -12x$

$-15 = 3x$

$-5 = x$

12. $6y + z = bc - 2y$; solve for y

$8y + z = bc$

$8y = bc - z$

$y = \frac{bc - z}{8}$

13. $s = \frac{n}{2}(a + t)$; solve for n

$\frac{s}{a+t} = \frac{n}{2}$

$\frac{2s}{a+t} = n$

14. $\frac{5xy+n}{2} = -6$; solve for y

$5xy + n = -12$

$5xy = -12 - n$

$y = \frac{-12-n}{5x}$

15. $3c + 5d = 7d - 6c$; solve for d

$9c = 2d$

$\frac{9c}{2} = d$

Solve.

16. $\frac{x-3}{x} = \frac{9}{10}$

$10x - 30 = 9x$

$-30 = -1x$

$30 = x$

17. $\frac{x+10}{x-7} = \frac{8}{9}$

$9x + 90 = 8x - 56$

$x = -146$

18. $-\frac{2}{7} = \frac{x-5}{x+8}$

$-2x - 16 = 7x - 35$

$19 = 9x$

$\frac{19}{9} = x$

19. A doctor sees each of her patients for 25 minutes during a typical appointment. How many patients can she see in a typical $7\frac{1}{2}$ hour day?

$7.5 \times 60 = \frac{450}{25} =$ 18 patients

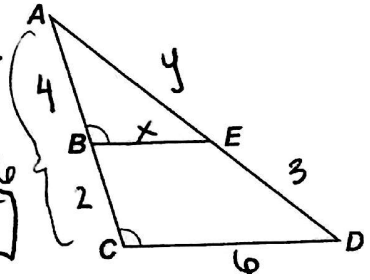
20. An employee working at an electronic store earned $3582 for working 3 months during the summer. What did the employee earn for the first two months?

$\frac{3582}{3} = 1194 \cdot 2 =$ $2388

21. It takes about 20 minutes to grade a student's paper. How long, in hours, does it take to grade papers for a class of 25 people?

$20 \times 25 = \frac{500}{60} =$ 8.3 hours

22. In the figure below, $AB = 4$, $AC = 6$, $AC = DC$, $DE = 3$. Find mBE and mAE.



$\frac{x}{6} = \frac{4}{6} \rightarrow 6x = 24 \rightarrow x = 4 = mBE$

$\frac{y}{4+3} = \frac{4}{6} \rightarrow 6y = 4y + 12 \rightarrow 2y = 12 \rightarrow y = 6 = mAE$