

Test 1 (Chapter 1 / 2) REVIEW

Questions from Chapter 1 and 2

1. Add: $(-7) + 5 + (-3)$

$$\begin{array}{r} \checkmark \\ -2 + -3 \\ \hline -5 \end{array}$$

2. Subtract: $5.8 - (-2.8)$

$$\begin{array}{r} 5.8 + 2.8 \\ \hline 11.6 \end{array}$$

3. Multiply: $(-7)(2)(-3)$

$$\begin{array}{r} \checkmark \\ -14(-3) \\ \hline 42 \end{array}$$

4. Solve: $\frac{2}{3} + \frac{1}{4}$

$$\begin{array}{r} \frac{2}{3} \cdot \frac{4}{4} = \frac{8}{12} \\ + \frac{1}{4} \cdot \frac{3}{3} = \frac{3}{12} \\ \hline \frac{11}{12} \end{array}$$

5. Solve: $4\frac{1}{2} - 2\frac{3}{16}$

$$\begin{array}{r} 4\frac{1}{2} \cdot \frac{8}{8} = 4\frac{8}{16} \\ - 2\frac{3}{16} - 2\frac{3}{16} \\ \hline 2\frac{5}{16} \end{array}$$

6. Solve: $\left(3\frac{2}{7}\right)\left(1\frac{1}{13}\right)$

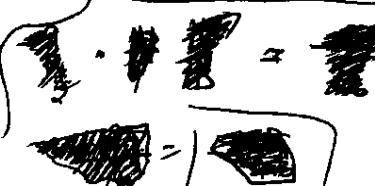
$$\frac{23}{7} \cdot \left(\frac{14}{3}\right) = \frac{46}{3} = 15\frac{1}{3}$$

7. Solve: $\left(-2\frac{1}{4}\right) \div \left(1\frac{1}{13}\right)$

$$-\frac{9}{4} \div \frac{14}{13}$$

$$-\frac{9}{4} \cdot \frac{13}{14} = -\frac{117}{56}$$

$$-\frac{117}{56} \text{ or } -2\frac{5}{56}$$



8. Solve: $40 = -8(x - 3)$

$$40 = -8x + 24$$

$$\begin{array}{r} -24 \\ -24 \\ \hline 16 = -8x \\ \div -8 \quad \div -8 \\ \hline x = -2 \end{array}$$

$$x = -2$$

9. Solve: $\frac{3}{5}y - 4 = 2$

$$\frac{3}{5}y - 4 = 2$$

$$\frac{3}{5}y = 6 \cdot \frac{5}{3}$$

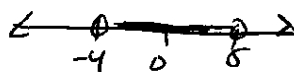
$$y = \frac{30}{3} = 10$$

$$y = 10$$

10. Graph: $-18 < 3x - 6 < 9$

$$\begin{array}{r} +6 \quad +6 \quad +6 \\ \hline -12 < 3x < 15 \\ \div 3 \quad \div 3 \quad \div 3 \\ \hline -4 < x < 5 \end{array}$$

$$-4 < x < 5$$



Questions on the State Exam

11. Simplify: $6 - 18 \div 9 - 4$

$$\begin{array}{r} \checkmark \\ 6 - 2 - 4 \\ 4 - 4 \\ \boxed{0} \end{array}$$

12. Simplify: $23 - (8)^2 \div (14 - 6) \cdot 6$

$$\begin{array}{r} 23 - 64 \div (8) \cdot 6 \\ 23 - 8 \cdot 6 \\ 23 - 48 \\ \boxed{-25} \end{array}$$

13. Simplify: $|8 + (-14)| + 9$

$$\begin{array}{r} |-6| + 9 \\ 6 + 9 \\ \boxed{15} \end{array}$$

14. Simplify: $-6[6(x+5)+x]$

$$\begin{array}{r} -6 [6x + 30 + x] \\ -6 [7x + 30] \\ \boxed{-42x - 180} \end{array}$$

15. Evaluate when $w = -4$: $-6w^2 + 5w + 3$

$$\begin{array}{r} -6(-4)^2 + 5(-4) + 3 \\ -6(16) + -20 + 3 \\ -96 + -20 + 3 \\ -116 + 3 = \boxed{-113} \end{array}$$

16. Solve for r : $-2(-9r - 6) = 6(r + 5)$

$$\begin{array}{r} 18r + 12 = 6r + 30 \\ \underline{-6r} \quad \underline{-6r} \\ 12r + 12 = 30 \\ \underline{-12} \quad \underline{-12} \\ 12r = 18 \\ \frac{12r}{12} = \frac{18}{12} \end{array} \quad \boxed{r = \frac{18+6}{12+6} = \frac{3}{2} = 1.5}$$

17. Solve for y : $\frac{6}{5}y - \frac{2}{3} = 4$

$$15 \left[\frac{6}{5}y - \frac{2}{3} = 4 \right]$$

$$3 \frac{15}{1} \cdot \frac{6}{5}y - \frac{15}{1} \cdot \frac{2}{3} = 15 \cdot 4$$

$$\begin{array}{r} 18y - 10 = 60 \\ +10 \quad +10 \\ \hline 18y = 70 \\ \frac{18y}{18} = \frac{70}{18} \end{array} \quad y = \frac{70 \div 2}{18 \div 2} = \frac{35}{9} = \boxed{3\frac{8}{9}}$$

18. Solve for t : $x = -8z + 7t$

$$\begin{array}{r} x = -8z + 7t \\ +8z \quad +8z \\ \hline \end{array}$$

$$\frac{x+8z}{7} = \frac{7t}{7}$$

$$\boxed{\begin{array}{l} t = \frac{x+8z}{7} \\ t = \frac{1}{7}x + \frac{8}{7}z \end{array}}$$

19. If 5 less than twice the square of a number, then the result is 7 more than three times a number. Choose the equation that could be used to find this number, x .
DO NOT SOLVE THE PROBLEM, JUST SET UP THE EQUATION.

$$2x^2 - 5 = 3x + 7$$

20. Write a proportion that solves the problem: A motorcycle can travel 705 miles on 19 gallons of gasoline. How many gallons of gas are needed to travel 1253 miles?
DO NOT SOLVE THE PROBLEM, JUST SET UP THE PROPORTION.

$$\frac{\text{miles}}{\text{gallons}} \quad \boxed{\frac{705}{19} = \frac{1253}{x}}$$

21. Simplify: $(7x^2 - 8x + 4) - (6x^2 - 8x - 5)$

$$7x^2 - 8x + 4 - 6x^2 + 8x + 5$$

$$7x^2 - 6x^2 - 8x + 8x + 4 + 5$$

$$\boxed{x^2 + 9}$$

22. Simplify: $-7x(-4x + 7)$

$$\boxed{28x^2 - 49}$$

23. Simplify: $(4x - 7)(6x - 7)$

$$(4x - 7)(6x - 7)$$

$$24x^2 - 28x - 42x + 49$$

$$\boxed{24x^2 - 70x + 49}$$

24. Solve the inequality: $14x + 4 \leq 26x + 20$

$$\begin{array}{r} 14x + 4 \leq 26x + 20 \\ \underline{-26x} \quad \underline{-26x} \end{array}$$

$$\begin{array}{r} -12x + 4 \leq 20 \\ \underline{-4} \quad \underline{-4} \end{array}$$

$$\begin{array}{r} -12x \leq 16 \\ \underline{-12} \quad \underline{-12} \end{array}$$

$$x \geq -\frac{16}{12}$$

$$\boxed{x \geq -\frac{4}{3}}$$

Word Problems on State Exam

A pair of jeans is priced at \$75.00, but is on sale for 20% off. What is the sale price of the jeans?

$$\text{Original} - \text{Discount} = \text{Sale Price}$$

$$75 - .20(75) = x$$

$$75 - 15 = x$$

$$\boxed{x = 60}$$

If a digital camera costs \$375 after a 25% discount, what was the original cost?

$$\text{Original} - \text{Discount} = \text{Sale Price}$$

$$x - .25x = 375$$

$$\frac{.75x}{.75} = \frac{375}{.75}$$

$$\boxed{x = 500}$$

If a DVD player costs \$690 after a 15% increase in price, what was the original cost?

$$\text{Original} + \text{Increase} = \text{New Price}$$

$$x + .15x = 690$$

$$\frac{1.15x}{1.15} = \frac{690}{1.15}$$

$$\boxed{x = 600}$$

Find the simple interest **percent** to yield \$100 interest in 5 years when \$500 is invested.

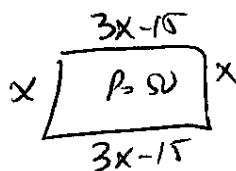
$$I = P \cdot r \cdot t$$

$$100 = 500 \cdot r \cdot 5$$

$$\frac{100}{2500} = \frac{2500r}{2500}$$

$$\boxed{r = \frac{100}{2500} = .04 = 4\%}$$

The length of a rectangular pool is 15 less than three times its width. Its perimeter is 50 meters. Find the **length** of the pool.



$$L = 3x - 15$$

$$w = x$$

$$L = \frac{3(w) - 15}{15}$$

$$w = \boxed{10}$$

$$3x - 15 + x + 3x - 15 + x = 50$$

$$8x - 30 = 50$$

$$\frac{+30}{+30} \quad \frac{+30}{+30}$$

$$\frac{8x}{8} = \frac{80}{8}$$

$$\boxed{x = 10}$$

$$\text{Length} = 15$$

$$\sqrt[10]{\begin{matrix} 15 \\ P=50 \\ 15 \end{matrix}} 10$$