Midterm Review

1.) Change to decimals $\frac{9}{5}$, $1.\overline{8}$, $\frac{5}{9}$, $\sqrt{3}$

1.80, 1.88, 1.66, 1.70

3rd, 4th, 1st, 2nd

[B]

2.) $\sqrt{891} = 29.8$

~~A.) $8\sqrt{11}$~~ 26.5 ~~B.) $81\sqrt{11}$~~ C.) $9\sqrt{11}$ 29.8 D.) $8\sqrt{91}$

3.) $\sqrt{93x}$ $\frac{93}{3 \cdot 31}$

~~A.) 46 ÷ 3~~ ~~B.) 11 ÷ 3~~ ~~C.) 118 ÷ 3~~ D.) 33 ÷ 3

4.) $7\sqrt{32} - 5\sqrt{18} = 14.3\ldots$ 7 [2nd] [x^2] 32 [)] [−] 5 [2nd] [x^2] 18 [)] [=]

~~A.) $17\sqrt{2} = 24.0$~~ C.) $2\sqrt{13}$

B.) $13\sqrt{2} = 18.3$ D.) $5\sqrt{7}$

5.) $y^x \; y^3 \quad x = 3$ [C]

6.) $\frac{21}{1 \cdot 21}$ $\frac{33}{1 \cdot 33}$ GCF $= 3u^2vw$

3 7 3 11

I think small.

7.) $2\sqrt{x-1} + 6 \quad x = 122$

$2\sqrt{122-1} + 6$

$2\sqrt{121} + 6$

$2(11) + 6$

$22 + 6 = 28$ [D]

8.) $5(12 - |11-5|) - |11-7|^2$

$5(12 - |-6|) - |4|^2$

$5(12 - (6)) - (4)^2$

$5(6) - 16$

$30 - 16 = 14$ [D]

9.) 19.19 × 6 = 115.14 + 28.81 × 3 = 86.43

201.57 [B]

20.) Moving ( ) is associative property.

(Multiple choice should say 3x, not 5x.)

$(5x + 3x)$ → adding. So, [B]

10.) $(18x^5 - 36x^4) - (5x^3 - 7)(3x^2 - 6x + 2)$

$18x^5 - 36x^4 + (35x^5 - 65x^4 + 25x^3 - 21x^2 + 42x - 14)$

$- \quad + \quad - \quad + \quad - \quad \pm$

$18x^5 - 35x^5 - 36x^4 + 65x^4 - 25x^3 + 21x^2 - 42x + 14$

$-12x^3 + 21x^2 - 42x + 14$

$-12 \div -2 = 6$ [A]

11.) $(4x+2)(x-7)$

$4x^2 - 28x + 2x - 14$

$4x^2 - 26x - 14$ [A]

12.) $(9x^3 - 2) + (5x^2 - 2x - 7)$

$- \quad - \quad \pm$

$9x^3 \quad -2$

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

$9x^3 - 5x^2 - 2x + 5$ [A]

13.) $\frac{9x^3}{9x} - \frac{81x^2}{9x} + \frac{72x}{9x}$ GCF = 9x

$9x(x^2 - 9x + 8)$

$9x(x-8)(x-1)$ [A]

14.) $5\sqrt{x} \quad 5x^2 \quad \frac{5}{2x} \quad \frac{x}{5} \quad x = 0.2$

$5\sqrt{0.2} \quad 5(0.2)^2 \quad \frac{5}{2(0.2)} \quad \frac{0.2}{5}$

$2.2 \quad 0.2 \quad 12.5 \quad 0.04$

A.) $0.04 > 0.2$ C.) $0.04 > 12.5$

B.) $2.2 > 12.5$ D.) $2.2 > 0.2$

15.) $x^2 + 6x + 8$

$(x+2)(x+4)$

[D]

8
1, 8
2, 4

16.) $\frac{I}{x+4} \quad \frac{B}{-10x^2 + 90x - 200}$ GCF = -10

$\frac{-10}{-10} \quad \frac{-10}{-10} \quad \frac{-200}{-10}$

$-10(x^2 - 9x + 20)$

$-10(x-4)(x-5)$

20
1, 20
2, 10
4, 5

$\frac{1}{-10(x-5)} = \frac{1}{-10x+50}$ [A]

I B

17.) $x^2 + 6x - 16 \quad | \quad (x+8)(x-4)$

$(x+8)(x-2)$

$\frac{x-2}{x+4}$ [B]

16
1, 16
2, 8
4, 4

18.)

$7x - 4 = 4x + 7x + 8$

$7x(-4) = (11x) + 8$

$-7x - 11x = +8 + 4$

$\frac{-4x}{-4} = \frac{12}{-4}$

$x = -3$ [B]

x, y

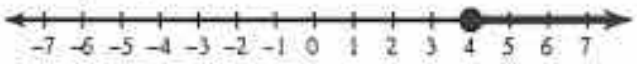
$(3, 4)$ $x \Rightarrow$ rolls of wrapping paper

$y \Rightarrow$ packages of ribbon

So, since $x = 3$, $y = 4$

3 rolls of wrapping paper and 4 packages of ribbons [A]

21. The solution set of an inequality is listed below.



$x \geq 4$

Which inequality has the solution set shown on the number line?

A. $-\frac{x}{6} \leq \frac{-2}{3}$ $\cdot -6$ $\quad$ C. $\frac{x}{6} \leq \frac{2}{3} \cdot 6$

$x \geq 4$ $\quad$ $x \leq 4$

B. $\frac{x}{6} \leq \frac{-2}{3} \cdot 6$ $\quad$ D. $-\frac{x}{6} \leq \frac{2}{3} \cdot -6$

$x \leq -4$ $\quad$ $x \geq -4$

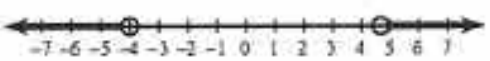
22. Which graph shows the solution set of the inequality: $|3r - 1| > 13$ or

A.

B.

C.

D.



opposite

$3r - 1 > 13$ $\quad$ or $\quad$ $3r - 1 < -13$

$3r > 13 + 1$ $\quad$ $3r < -13 + 1$

$\frac{3r}{3} > \frac{14}{3}$ $\quad$ $\frac{3r}{3} < \frac{-12}{3}$

$r > \frac{14}{3}$ $\quad$ $r < -4$

$r > 4.\overline{6}$ $\quad$ open

23. Jeremy makes and sells bobbleheads. His monthly goal is to make a profit over $1,500.

- He sells each bobblehead for $30.
- He has a monthly fixed cost of $725.

The inequality $30x + 725 > 1{,}500$ models the situation. Which best describes the meaning of x in the inequality?

A. The number of bobbleheads that Jeremy must sell to recover his monthly fixed costs

B. The profit made from 2 months of sales

C. The number of bobbleheads Jeremy must sell to reach his goal

D. The profit made form selling 30 bobbleheads

$30x + 725 > 1500$ ← goal

cost $\quad$ each bobblehead $\quad$ fixed cost