Name: _____ Date: _____

Placement Test Review Problems

_____1. Simplify the expression. $5-2\left[-2^2-\left(3\cdot 2^3-12\div\sqrt{9}\right)\right]=$

(a) –48 (b) 53 (c) 37 (d) –72

_____2. Simplify; use positive exponents in answer. $\left(\frac{3p^4v^{-2}}{s^4}\right)^{-2}=$

(a) $\frac{3p^8v^4}{s^6}$ (b) $\frac{-9s^8v^4}{p^8}$ (c) $\frac{3p^8v^4}{s^8}$ (d) $\frac{s^8v^4}{9p^8}$

_____3. Evaluate and write the answer in scientific notation. $\frac{4.6\times10^5}{2.3\times10^{-2}}=$

(a) 2×10^{-7} (b) 2×10^{7} (c) 2×10^{3} (d) 2×10^{-3}

_____4. Solve for y. $\frac{3}{8}y-\left(y-\frac{4}{9}\right)=\frac{1}{72}\left(y-7\right)$

(a) $-\frac{39}{98}$ (b) $\frac{39}{44}$ (c) $\frac{39}{46}$ (d) $-\frac{25}{46}$

_____5. Solve for C. $F=\frac{9}{5}C+32$

(a) $C=\frac{5}{9}\left(F-32\right)$ (b) $C=\frac{\left(F-32\right)}{9}$

(c) $C=\frac{5}{\left(F-32\right)}$ (d) $C=\frac{9}{5}\left(F-32\right)$

_____6. Solve. $-42x-42\le-6\left(6x+3\right)$

(a) $x\le-4$ (b) $x>-4$ (c) $x\ge-4$ (d) $x<-4$

_____7. Solve. $\left|8m-3\right|+1=14$

(a) 2 (b) $2,-\frac{5}{4}$ (c) 2, –2 (d) $2,-\frac{3}{2}$

_____8. Solve. $\left|3y-2\right|-7>-4$

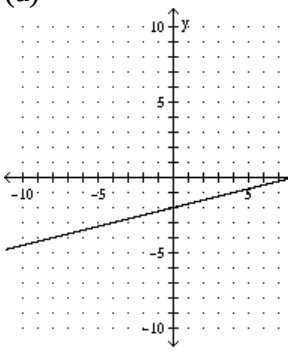
(a) $y>\frac{5}{3}$ or $y<\frac{-1}{3}$ (b) $y>\frac{5}{3}$

(c) $\frac{-1}{3}<y<\frac{5}{3}$ (d) $y>\frac{5}{3}$ or $y<\frac{13}{3}$

Placement Test Review Problems (cont.)

_____9. Graph. $y = \frac{1}{4}x + 2$

(a)



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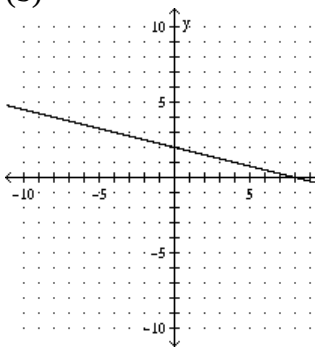

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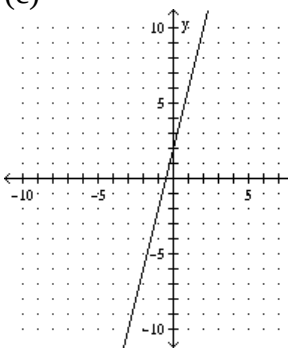

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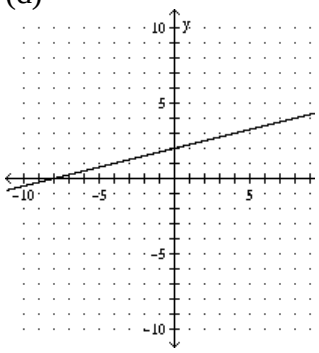


_____10. Find the slope of a line that is perpendicular to $5x + 2y = 8$.

(a) 4 (b) $-\frac{5}{2}$ (c) $\frac{5}{2}$ (d) $\frac{2}{5}$

_____11. Solve the system. $\begin{cases} 3x - 5y = -12 \\ 6x + 8y = -24 \end{cases}$ The solution for *x* is

(a) –4 (b) 0 (c) 4 (d) 2

_____12. Simplify. $\left(-6x^5 + 9x^7 - 1 - 9x^6\right) - \left(-4 + 6x^6 + 3x^7 - 9x^5\right) =$

(a) $12x^7 - 3x^6 - 15x^5 - 5$ (b) $6x^7 - 15x^6 + 3x^5 + 3$
(c) $6x^7 - 3x^6 - 15x^5 - 5$ (d) $12x^7 - 3x^6 - 15x^5 + 3$

Placement Test Review Problems (cont.)

_____13. Multiply. $(9x-5y)^2 =$

(a) $9x^2-90xy+25y^2$ (b) $9x^2+25y^2$
(c) $81x^2+25y^2$ (d) $81x^2-90xy+25y^2$

_____14. Multiply. $\left(x+\frac{1}{3}\right)\left(x-\frac{1}{3}\right) =$

(a) x^2-9 (b) $x^2-\frac{1}{9}$ (c) x^2+9x-9 (d) $9x^2-1$

_____15. Factor completely. $10a^3-25a^2b-12ab^2+30b^3 =$

(a) $\left(5a^2+6b^2\right)(2a+5b)$ (b) $\left(5a^2-6b\right)(2a-5b)$
(c) $\left(10a^2-6b^2\right)(a-5b)$ (d) $\left(5a^2-6b^2\right)(2a-5b)$

_____16. Factor completely. $t^3+64 =$

(a) $(t+4)\left(t^2-4t+16\right)$ (b) $(t-64)\left(t^2-1\right)$
(c) $(t+4)\left(t^2+16\right)$ (d) $(t-4)\left(t^2+4t+16\right)$

_____17. Solve. $4k^2-23k-6=0$

(a) $-\frac{1}{4}, 6$ (b) $-\frac{1}{4}, 4$ (c) $-4, 6$ (d) $\frac{1}{23}, -\frac{1}{4}$

_____18. A certain rectangle's length is 9 feet longer than its width. If the area of the rectangle is 90 square feet, find its dimensions.

(a) 5 feet by 14 feet (b) 6 feet by 15 feet
(c) 7 feet by 16 feet (d) 5 feet by 16 feet

_____19. Divide and simplify. $\dfrac{z^2+10z+24}{z^2+11z+28} \div \dfrac{z^2+6z}{z^2-z-56} =$

(a) $\dfrac{z-8}{z}$ (b) $\dfrac{z-8}{z^2+7z}$ (c) $z-8$ (d) $\dfrac{z}{z^2+11z+28}$

Placement Test Review Problems (cont.)

_____20. Add. $\dfrac{3}{y^2-3y+2}+\dfrac{5}{y^2-1}=$

(a) $\dfrac{7y-8}{(y-1)(y+1)(y-2)}$ (b) $\dfrac{8y-7}{(y-1)(y+1)(y-2)}$

(c) $\dfrac{8}{(y-1)(y+1)(y-2)}$ (d) $\dfrac{8y-7}{(y-1)(y-2)}$

_____21. Simplify. $\dfrac{4+\dfrac{2}{x}}{\dfrac{x}{3}+\dfrac{1}{6}}=$

(a) $\dfrac{x}{12}$ (b) 12 (c) 1 (d) $\dfrac{12}{x}$

_____22. Solve. $\dfrac{8}{x+5}-\dfrac{3}{x-5}=\dfrac{15}{x^2-25}$

(a) 70 (b) –14 (c) 8 (d) 14

_____23. Simplify. $\dfrac{\left(2x^{1/2}\right)^3}{x^{-1/4}}=$

(a) $6x^{7/4}$ (b) $8x^{3/8}$ (c) $8x^{5/4}$ (d) $8x^{7/4}$

_____24. Simplify. $\sqrt[3]{-64a^{14}b^{13}}=$

(a) $4ab\sqrt[3]{a^5b^5}$ (b) $4\sqrt[3]{a^{13}b^{14}}$

(c) $-4a^4b^4\sqrt[3]{a^2b}$ (d) $-4a^4b^4\sqrt{a^2b}$

_____25. Rationalize the denominator. $\dfrac{1+\sqrt{6}}{1-\sqrt{6}}=$

(a) $\dfrac{-5-2\sqrt{6}}{7}$ (b) $\dfrac{7-2\sqrt{6}}{-5}$ (c) –1 (d) $\dfrac{7+2\sqrt{6}}{-5}$

Placement Test Review Problems (cont.)

_____26. Solve. $\sqrt{3x+1} = x-3$

(a) 1,8 (b) 8 (c) $-1,-8$ (d) 1

_____27. Simplify. $4-\sqrt{-100}$

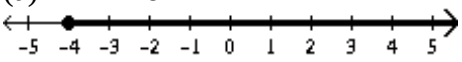
(a) $4+10$ (b) $4-10i$ (c) $4+10i$ (d) $4-100i$

_____28. Solve. 5+3x (x – 2) = 4.

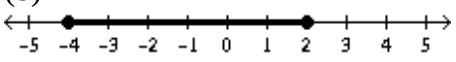
(a) $\frac{3\pm\sqrt{6}}{3}$ (b) $\pm\sqrt{24}$ (c) $1\pm 2\sqrt{6}$ (d) $\frac{3\pm 2\sqrt{3}}{3}$

_____29. Solve the inequality $x^2 + 2x \geq 8$ and graph the solution.

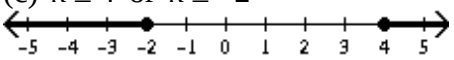
(a) $x \geq -4$ or $x \geq 2$



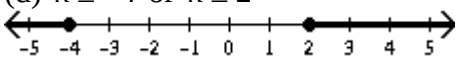
(b) $-4 \leq x \leq 2$



(c) $x \geq 4$ or $x \leq -2$



(d) $x \leq -4$ or $x \geq 2$



_____30. The equation 0.08x = 48 is equivalent to :

(a) 8x = 480 (b) 8x = 0.48 (c) 0.01x = 6 (d) x = 47.02

_____31. Simplify. 7–2[3x–2(x–5y)–7y]

(a) 7–2x+24y (b) 7–2x–6y (c) 7–2x+34y (d) 5x+15y

_____32. Simplify. $(4p^4y^3)(-2p^2y)$

(a) $\frac{p^8y^3}{8}$ (b) $-8p^8y^3$ (c) $-8p^6y^3$ (d) $-8p^6y^4$

_____33. The x intercept of 5x + 3y = 15 is.

(a) 0 (b) 5 (c) 3 (d) x = 47.02

_____34. If $f(x) = 3x^2+4$, f(x–h) =

(a) $3(x-h)^2+4$ (b) $3x^2+4-h$ (c) $(3x^2+4)-(3h^2+4)$ (d) $3x^2-2xh+h^2+4$

Placement Test Review Problems (cont.)

_____35. If $\log_b a = c$, then

(a) $b^c = a$ (b) $b^a = c$ (c) $a^c = b$ (d) $c^b = a$

_____36. If $8^x = 5$, then

(a) $x = \log_8 5$ (b) $x = \log_5 8$ (c) $x = \log \frac{5}{8}$ (d) $x = \log_8 \frac{8}{5}$

_____37. $\frac{4}{3a} + \frac{3}{2b} =$

(a) $\frac{3}{a+b}$ (b) $\frac{8b+9a}{6ab}$ (c) $\frac{7}{3a+2b}$ (d) $\frac{7}{6ab}$

_____38. $5x^0 =$

(a) 0 (b) 5 (c) 1 (d) undefined

_____39. $\frac{6x^2+2x}{2x} =$

(a) 3x (b) 3x+1 (c) $6x^2$ (d) 5x

_____40. $\frac{10}{\sqrt{15}} =$

(a) $\frac{20}{3}$ (b) $\frac{2}{\sqrt{3}}$ (c) $\frac{2\sqrt{15}}{3}$ (d) 2.6

_____41. Solve. $10x^2 = 5x$

(a) $\{\frac{1}{2}\}$ (b) $\{\frac{1}{2}, 0\}$ (c) $\{2\}$ (d) $\{-\frac{1}{2}, 0\}$

_____42. $\left(\frac{2}{3}\right)^{-2} - \left(\frac{3}{4}\right)^{-1} =$

(a) $\frac{11}{12}$ (b) $-\frac{7}{12}$ (c) $-\frac{43}{36}$ (d) $-\frac{8}{9}$

Placement Test Review Problems (cont.)

_____43. $16^{-\frac{3}{4}} =$

(a) –12 (b) $16^{\frac{3}{4}}$ (c) $\frac{1}{8}$ (d) –8

_____44. $(2-3\sqrt{x})^2 =$

(a) 4–9x (b) 4+9x (c) $4-6\sqrt{x}+x$ (d) $4-12\sqrt{x}+9x$

_____45. $\frac{2}{5}ab-3a^2+\frac{3}{4}ab-5a^2 =$

(a) $\frac{5}{9}ab-8a^2$ (b) $\frac{23}{20}ab-8a^2$ (c) $\frac{17}{10}ab-8a^2$ (d) $23ab-160a^2$

_____46. Solve for p. $A=\frac{12M}{p+3pr}$

(a) $\frac{12M-3pAr}{A}$ (b) $\frac{4M}{Ar}$ (c) $\frac{4M}{A+Ar}$ (d) $\frac{12M}{A+3Ar}$

_____47. $-\sqrt{12}+2\sqrt{27}-\sqrt{75} =$

(a) $-\sqrt{3}$ (b) $\sqrt{3}$ (c) $-11\sqrt{3}$ (d) can not be combined

_____48. Solve the system: $\begin{Bmatrix} 10x+3y=8 \\ y=-2x+2 \end{Bmatrix}$ The solution for **y** is:

(a) ½ (b) -1 (c) 1 (d) -1/2

_____49. The smallest angle in a triangle is one–third of the largest angle. The third angle is 20° more than the smallest. Find the measure of the smallest angle. Hint: sum of angles is 180°.

(a) 96° (b) 32° (c) 52° (d) 16°

Placement Test Review Problems (cont.)

_____50. Simplify. $8-(-6)\left[\frac{2(-3)-5(4)}{-8(6)-4}\right]=$

(a) 11 (b) 7 (c) –7 (d) 0

_____51. Simplify. $\frac{2x^{-5}}{x^{-6}}=$

(a) 32x (b) x/32 (c) 2x (d) 2/x

_____52. Expand and simplify. $(x-2)^3$

(a) x^3-8 (b) $x^3-6x^2+12x-8$ (c) $x^3+6x^2-12x-8$ (d) x^3-x^2+x-8

_____53. If $g(x)=x^2-6$, then $g(c)+g(2)=$

(a) c^2+4c-2 (b) c^2-8 (c) c^2+4c+4 (d) c^2+4

_____54. Simplify. $\frac{a^{-1}+b^{-1}}{a^{-1}}$

(a) $1+\frac{1}{b}$ (b) $\frac{a}{a+b}$ (c) $\frac{1}{b}$ (d) $\frac{b+a}{b}$

_____55. Find the equation of line through points (2,3) and (-4,5).

(a) $y-5=-\frac{1}{3}(x-2)$ (b) $y-5=-\frac{1}{3}(x+4)$

(c) $y-5=3(x+4)$ (d) $y=-\frac{1}{3}x+5$

_____56. If x = 3 and y = -2, evaluate the expression $-3(x-y)^2+1$.

(a) -74 (b) -75 (c) -38 (d) -2